



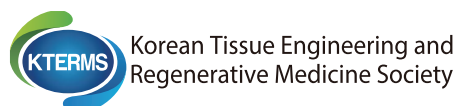
**Tissue Engineering and Regenerative Medicine
International Society Asia-Pacific Chapter Conference 2022**

TERMIS-AP 2022

October 5-8, 2022 / ICC Jeju, South Korea

New Chapter of Future Regenerative Medicine

Program Book

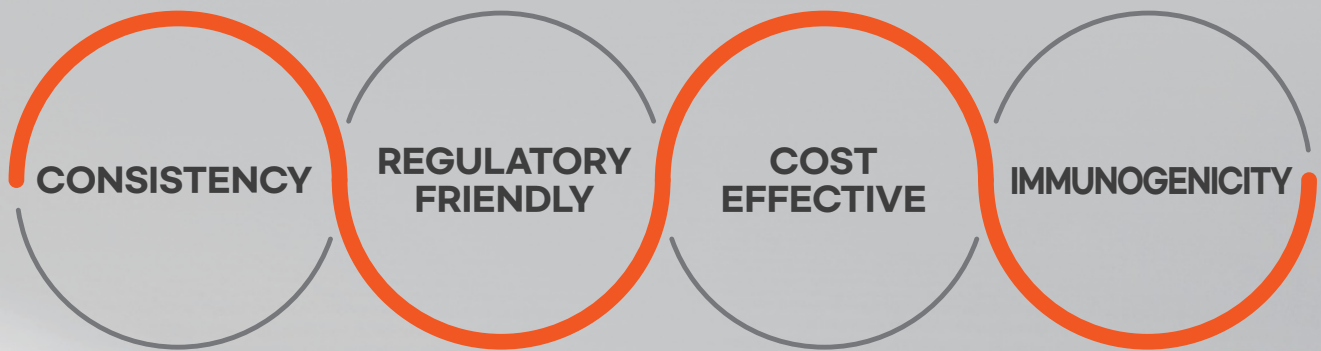




Xcell Therapeutics was established in 2015 to commercialize serum-free **chemically defined media**.

We are **first in class** company with unique stem cell chemically defined media technology and develop various human derived cell culture media.

We also have **cGMP compliant facilities**, strict quality control in accordance with pharmaceutical level.



CellCor™ CD MSC

- ✓ Superior Cell Growth Rate
- ✓ GMP Compliant Manufacturing
- ✓ All Components are Defined : High Consistency
- ✓ Don't Contain any Serum/hPL Related Components



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Welcome Message

Dear Colleagues,

On behalf of the Tissue Engineering and Regenerative Medicine International Society – Asia Pacific Chapter and the Korean Tissue Engineering and Regenerative Medicine Society, we are pleased that you attend the TERMIS AP 2022 conference that is held in the beautiful island of Jeju, South Korea on October 5-8, 2022.

With the mission of promoting research in all aspects of new and emerging scientific themes, TERMIS-AP 2022 will comprise various topics that provide comprehensive coverage of diverse issues in current tissue engineering and regenerative medicine under the main theme of '**New Chapter of Future Regenerative Medicine**'. We have organized exciting scientific programs, which will bring together eminent speakers and delegates from all over the world to share the most up-to-date research findings and accomplishments in the field of tissue engineering and regenerative medicine.

Jeju Island, the venue location, is called 'Treasure Island of the World' and the only place in the world certified by UNESCO Triple Crown. You can experience the Korean culture, spectacular mountains, and picturesque beaches in Jeju Island and enjoy various fun activities including golf, swimming, hiking, and mountain climbing during your stay at Jeju Island. We strongly assure you that TERMIS-AP 2022 will give you the most memorable experience in your academic life.

Sincerely,



Moon Suk Kim, Ph.D.
Conference Co-Chair
Ajou University



Gunil Im, M.D., Ph.D.
Conference Chair
Dongguk University



Byung-Soo Kim, Ph.D.
Conference Co-Chair
Seoul National University

Welcome Message

Dear TERMIS-AP 2022 Participants,

Our TERMIS-AP 2022 meeting is remarkably important and worthwhile in so many ways. As we emerge a few years of challenging constraints on face-to-face meetings, I am particularly delighted that this is our first TERMIS-AP meeting since before the pandemic. As we return to a more traditional style of meeting, I acknowledge the TERMIS-AP Chapter Chair Prof. J. M. Yang, and the Conference Chairs Prof. Gunil Im, Prof. Moon Suk Kim and Prof. Byung-Soo Kim, and all the TERMIS-AP team for their ongoing work and making it possible for us to meet in Jeju.

As participants, you are so fortunate to enjoy Jeju. It is a beautiful setting for a special TERMIS meeting. TERMIS is the most prominent organisation in the field of tissue engineering and regenerative medicine globally. Among its activities, TERMIS promotes education, research, innovation, clinical translation, and social responsibility within the field of tissue engineering and regenerative medicine through regular meetings, training courses, scientific and lay publications, outreach activities and more. TERMIS provides an important international forum for the informed discussion and debate of achievements and challenges of tissue engineering and regenerative medicine therapies.

TERMIS relies on countless contributions by outstanding people who freely give of their time and skills to help our not-for-profit Society. Through its three Chapters, TERMIS functions to broadcast superb tissue engineering and regenerative medicine for the broader benefit of the world. I thank our remarkable and indispensable Sarah Wilburn, fine Chapter Chairs and TERMIS officers, dedicated committees, students and young investigators, our countless volunteers, our members, supporters, industry partners, donors, and more. All of you help to strengthen TERMIS, for now and in the many years ahead.

I wish you all the very best. Renew your friendships, discover new colleagues, share experiences, discuss exciting discoveries, and contribute to a better world.

Enjoy our TERMIS-AP meeting and make sure you enjoy your visit to this beautiful island.



Professor Tony Weiss
TERMIS Global President



Welcome Message

Welcome Message from TERMIS AP Continental Chair

On behalf of the Tissue Engineering and Regenerative Medicine International Society – Asia Pacific Chapter (TERMIS-AP), we would like to cordially invite you for TERMIS-AP 2022 conference that will be held on Jeju island, **Korea on October 5-8, 2022.**

Our TERMIS-AP 2022 conference organizers, Gunil Im, M.D., Ph.D., Moon Suk Kim, Ph.D, and Byung-Soo Kim, Ph.D. have been working carefully to formulate the wonderful program on the main theme '**New Chapter of Future Regenerative Medicine**'. It will comprise various topics that provide comprehensive coverage of diverse issues in current tissue engineering and regenerative medicine. We believe that the conference will give you a good opportunity for fruitful harvest. Moreover, it will be a forum for interdisciplinary discussion between scientists, bioengineers, clinicians, regulatory officials and so on.

Jeju is a beautiful island. It is the only place in the world certified by UNESCO Triple Crown with the name 'Treasure Island of the World'. I hope you have opportunities to explore the Korean cultural and various fun activities of Jeju island.

The success of the conference will rely on your contribution and participation. We would like to welcome you all to Jeju island and look forward to listening to your presentations and conversing with you during the TERMIS-AP 2022 conference.

Sincerely,



Jen Ming Yang Ph.D.
Continental Chair
TERMIS-AP Chapter

Organizing Committee

Conference Chair

Gun-Il Im (Dongguk University Ilsan Hospital)

Conference Co-Chairs

Moon Suk Kim (Ajou University)

Byung-Soo Kim (Seoul National University)

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Soon Hee Kim (Hallym University)
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Nobuhiko Yui (Tokyo Medical and Dental University, Japan)
Oscar Lee (National Yang-Ming University, Taiwan)
Pawan Kumar Gupta (Stempeutics Research, India)
Ralph Müller (Institute for Biomechanics, Switzerland)
Raymond Tong (The Chinese University of Hong Kong, China)
Richard Oreffo (University of Southampton, UK)
Rocky Tuan (The Chinese University of Hong Kong, China)
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Steve Oh (Bioprocessing Technology Institute (A*Star), Singapore)
Takanori Iwata (Tokyo Medical and Dental University, Japan)
Tan Lay Poh (Nanyang Technological University, Singapore)
Tim Woodfield (University of Otago, New Zealand)
Wei Liu (Shanghai Jiao Tong University, China)
William Hwang (National Cancer Centre of Singapore, Singapore)
Wojciech Świążkowski (Warsaw University of Technology, Poland)
Yanan Du (Tsinghua University, China)
Yasuhiko Iwasaki (Kansai University, Japan)
Yasuhito Tabata (Kyoto University, Japan)
Yin Xiao (Queensland University of Technology, Australia)
Yoh-ichi Tagawa (Tokyo Institute of Technology, Japan)

2022 TERMIS-AP Awardees

Excellence Achievement Award



Prof. Yasuhiko Tabata

Institute for Life and Medical Sciences, Kyoto University, Japan

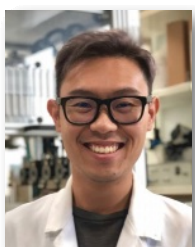
Outstanding Scientist Award



Prof. Yin Xiao

Distinguished Professor School of Medicine and Dentistry, Griffith University, Australia

Young Investigator Award



Dr. Khoon S. Lim

Department of Orthopaedic Surgery and Musculoskeletal Medicine, University of Otago, New Zealand



Dr. Jiao Jiao Li

School of Biomedical Engineering, Faculty of Engineering and IT, University of Technology Sydney, Australia

2022 TERMIS-AP Awards Session

- Venue: Halla Hall, 3F
- Date & Time: October 7 (Fri), 10:30-12:00



Conference Information

Registration

Registration Desk

- Venue: Lobby, 3F, ICC Jeju

- Date & Time:

- October 5 (Wed), 08:00-18:00
- October 6 (Thu), 08:00-18:00
- October 7 (Fri), 08:00-18:00
- October 8 (Sat), 08:00-13:00

Conference Kit Pick-up

Participants will receive a coupon for a conference kit including program book. Please present this coupon at the 'Kit / Information' located at the registration desk.

Certificate of Attendance

A Certificate of attendance will be provided to all registered attendees. It will be downloadable at My Page menu on the conference website after the closing ceremony.

Exhibition

- Venue: Lobby, 3F

- Date & Time:

- October 5 (Wed), 13:00-18:00
- October 6 (Thu), 08:00-18:00
- October 7 (Fri), 08:00-18:00
- October 8 (Sat), 08:00-13:00

Lunch

Buffet lunches will be available for ALL on Oct. 6-7 at 12:00. Please show your lunch coupon at the entrance.

- Venue: Tamna Hall B+C, 5F

- Date & Time: October 6 (Thu)-7 (Fri), 12:00-13:00

Official/ Social Program

Opening Ceremony

- Venue: Tamna Hall A, 5F

- Date & Time: October 5 (Wed), 13:00-13:30

Welcome Reception

- Venue: Ocean View, 5F

- Date & Time: October 5 (Wed), 18:30-20:30

- Attendees: All are welcome to join.

Presidential Dinner

- Venue: The Seaes Hotel & Resort Jeju

- Date & Time: October 6 (Thu), 18:30-20:30

- Attendees: By invitation only.

SYIS Happy Hour (complimentary)

- Venue: Delizia Restaurant, 3F
- Date & Time: October 6 (Thu), 18:30-20:30
- Attendees: Students and young investigators only.

Conference Banquet

- Venue: Tamna Hall B+C, 5F
- Date & Time: October 7 (Fri), 19:00-20:30
- Attendees: Only those who purchased the ticket can be admitted.

Closing Ceremony

- Venue: Halla Hall, 3F
- Date & Time: October 8 (Sat), 12:30-13:00

Pre-conference

The 2nd Advanced Regenerative Medicine Forum 2022

Pre-conference is organized by Regenerative Medicine Acceleration Foundation (RMAF).

- Venue: Halla Hall, 3F, ICC Jeju
- Date & Time: October 5 (Wed), 09:30-12:00

Luncheon Seminar

Xcell Therapeutics Luncheon Seminar

Limited to the first 100 participants the lunch boxes will be served.

- Date&Time: October 6 (Thu), 12:10-12:50
- Venue: Samda Hall, 3F, ICC Jeju
- Title: Innovative Method for Cell Culture Media Development
- Speaker: Dr. Jooyoun Alice Lee (Xcell Therapeutics, Republic of Korea)
- Description: The way to develop culture media is to analyze existing commercial media through reverse engineering tools, which required a lot of cost and time. Our platform technology called CAMP can innovatively reduce development cost and time. Using CAMP, it is possible to maintain the unique properties of each cell during the proliferation without animal derived components such as FBS. CAMP can select and provide optimum ACF(Animal Component Free) Essential to various cell type, and It shows superior performance compared to FBS media or commercial serum free media.

Tissue Eng Regen Med Editorial Meeting

- Date & Time: October 6 (Thu), 14:30-15:30
- Venue: Delizia Restaurant, 3F, ICC JEJU
- Attendees: TERM EIC, Senior editor, AEs, Social media editor, Regional editor only.



Scientific Information

Guidelines for Presenters

Oral Presentation

1. Official language is English.
2. The allotted symposia time is 90 minutes; while for those sessions scheduled on Oct. 8, it is 120 minutes. Please adhere to the given time strictly.
3. In order to avoid technical issues, presentation materials should be in Microsoft PowerPoint (PPT) or Portable Document Format (PDF) file in the 16:9 slide size.
4. Submission of your presentation materials
 - All presentation materials should be submitted an hour prior to the session. The preview room (Room 300) will have a coordinator to assist you with uploading the presentation materials to the designated session.
 - If you wish to use a personal laptop (including a Macintosh-type computer), please bring your own adaptor to a VGA-type plug. In this case, a test is required prior to the start of the presentation to ensure that there are no issues. We ask that you arrive at the operations desk in your presentation room during the break time of the previous session.

Poster Presentation

1. Official language is English.
2. Each poster should include the title (preferably at the top), as well as the names and affiliations of the authors.
3. Posters must not exceed the dimensions (A0 size) of 841mm (width) x 1189 (height) and must be printed by the presenter.
4. Posters will be displayed in the lobby. (3rd floor for General and 5th floor for SYIS.) Each poster board is identified with a presentation number to the list in the program book.

Category	Poster Session Part1	Poster Session Part2
Presentation Time	October 5 (Wed), 16:00-16:30	October 7 (Fri), 10:00-10:30
	October 6 (Thu), 10:00-10:30	October 8 (Sat), 10:00-10:30
Mounting	October 5 (Wed), 12:00-13:00	October 7 (Fri), 08:00-09:00
Dismounting	October 6 (Thu), 17:00-18:00	October 8 (Sat), 13:00-14:00

- ※ Presenters should be in a poster area to present their work during the designated poster session time.
- ※ Please note that all posters that have not been removed by noticed dismounting time will be automatically taken down and discarded.

Awards

The TERMIS-AP 2022 will present awards during the closing ceremony on October 8 (Sat), 12:30-13:00 in the Halla Hall on the 3rd floor of ICC Jeju.

- **SYIS Award:** Selected young scientists from oral and poster presentation will be awarded with certificates.
- **Best Poster Award:** Certificates will be given to outstanding poster presenters. Only the poster presented during the designated presenting time will be considered for the award.

Access to Abstract

All abstracts can be accessed online at the conference website (<https://ap2022termis.org/>).

Audio, Photo, Video and Mobile Phone Policy

Please note that audio, photo and video recording by various devices (including cameras, laptops, PDAs, mobile phones, watches, and table PCs) are strictly prohibited during all symposia and oral sessions unless prior permission is obtained from the conference organizer. Mobile phones must also be switched off or set to silent mode while attending sessions. Recording and photography in the poster areas are also strictly prohibited.

Useful Information

ICC Jeju

Wi-Fi Access

Wi-Fi access with the network name [JEJU FREE WIFI] is available at ICC Jeju.

Non-smoking

It is a non-smoking area within the ICC Jeju.

Parking

Parking is available at ICC Jeju and there is no additional parking fee.

Cloakroom

- Limited space will be available and on a first-come, first-served basis at the convention center.
- Deposited items must be retrieved before the closing hour. Non-compliance may result in loss of the item.
- Valuables, fragile items, etc. will not be accepted.
- Items will be released to any person presenting the storage tag.
- Conference organizers are not responsible for lost or misplaced items and claimed lost/found items will only be released with the proof of identification/confirmation of ownership.

Date	Operating Hours	Location
October 5 (Wed)	08:00-18:00	Registration Desk, 3F, ICC Jeju
October 6 (Thu)	08:00-18:00	
October 7 (Fri)	08:00-18:00	
October 8 (Sat)	08:00-13:00	

Shuttle Bus Service

TERMIS-AP 2022 provides complimentary shuttle buses between the Jeju international airport, hotels and ICC Jeju. The schedules may change depending on the situation and for the latest schedules, please visit the information desk. The bus stop locations are posted on the website at the notice board (<https://ap2022termis.org/>).

Time

Korea standard time is nine hours ahead of Greenwich Mean Time (GMT+9).

Electricity

220 volt outlets are most common in Korea. Please check the power supply before use.

Emergency Call

112	Police
119	Emergencies for Fire / Rescue & Hospital Services
1330	Tourist Information Services
1339	Medical Emergency

Tip & Tax

Tippling is not a regular practice in Korea. Service charges are included in your bill for rooms, meals, and other services at hotels and upscale restaurants. Koreans occasionally do tip when they are especially pleased with the service they receive.

Value-added tax (VAT) is levied on most goods and services at a standard rate of 10% and is included in the retail price. In tourist hotels, this 10% tax applies to rooms, meals, and other services, and is included in the bill.

Program at a Glance

Time	Oct 5 (Wed)	Oct 6 (Thu)
8:00-9:00	Registration	Registration
9:00-10:00	Pre-Conference (RMAF)	Plenary Lecture 2 (Prof. Hsing-Wen Sung)
10:00-10:30		Coffee Break & Poster Session Part 1
10:30-12:00		Symposia / Oral Session 3
12:00-13:00		Lunch
12:00-13:00	Break	
13:00-13:30	Opening Ceremony	Poster viewing & Exhibition
13:30-14:30	Plenary Lecture 1 (Prof. James J Yoo)	
14:30-16:00	Symposia / Oral Session 1	
16:00-16:30	Coffee Break & Poster Session Part 1	
16:30-18:00	Symposia / Oral Session 2	
18:00-18:30		
18:30-20:30	Welcome Reception	Presidential Dinner (SYIS Happy Hour)

Detailed Program

Time	Oct 5 (Wed)		
08:00-09:30	Registration		
09:30-09:40	Pre-Conference (RMAF) (Halla Hall)	Opening Speech & Greeting	
09:40-10:20		Plenary Speak (Ministry of health and welfare (MOHW))	
10:20-10:30		Break	
10:30-11:00		Lecture 1 (Dr. Masayuki Nomura)	
11:00-11:30		Lecture 2 (Dr. James J. Yoo)	
11:30-12:00		Lecture 3 (Dr. Francesca Lorraine Lim)	
12:00-13:00	Break		
13:00-13:30	Opening Ceremony (Tamna Hall)		
13:30-14:30	Plenary Lecture 1 (Prof. James J Yoo) Overcoming translational challenges for the new era of regenerative medicine (Tamna Hall)		
14:30-16:00	S1-A (Halla Hall)	S1-B (Samda Hall)	S1-C (Room 301)
	Tissue Engineering Biofabrication for Tissue Engineering and Personalized Disease Models	Cardiovascular Clinical application of therapeutics for cardiac repair	Plastic Surgery Tissue engineering for Plastic Surgery
16:00-16:30	Coffee Break		
16:30-18:00	S2-A (Halla Hall)	S2-B (Samda Hall)	S2-C (Room 301)
	Tissue Engineering Biomaterials and Enabling Technologies Innovation for Food Sustainability and Security	Cardiovascular Recent Advances in Myocardial Tissue Engineering	Plastic Surgery Advances in Wound Healing and Scar Therapy
18:00-18:30			
18:30-20:30	Welcome Reception		

Oct 7 (Fri)		Oct 8 (Sat)		Time
Registration	Poster viewing & Exhibition	Registration	Poster viewing & Exhibition	8:00-9:00
Plenary Lecture 3 (Prof. David Mooney)		Plenary Lecture 4 (Prof. Young Sook Son)		9:00-10:00
Coffee Break & Poster Session Part 2		Coffee Break & Poster Session Part 2		10:00-10:30
Symposia / Oral Session 7		Symposia / Oral Session 11		10:30-12:00
Lunch		Closing Ceremony		12:00-13:00
Symposia / Oral Session 8		Optional Tour		13:00-13:30
Symposia / Oral Session 9				13:30-14:30
Coffee Break				14:30-16:00
Symposia / Oral Session 10				16:00-16:30
FTERM Session				16:30-18:00
Conference Banquet		18:00-18:30		
		18:30-20:30		

Oct 5 (Wed)			Time
Registration			08:00-09:30
Pre-Conference (RMAF) (Halla Hall)	Opening Speech & Greeting		09:30-09:40
	Plenary Speak (Ministry of health and welfare (MOHW))		09:40-10:20
	Break		10:20-10:30
	Lecture 1 (Dr. Masayuki Nomura)		10:30-11:00
	Lecture 2 (Dr. James J. Yoo)		11:00-11:30
	Lecture 3 (Dr. Francesca Lorraine Lim)		11:30-12:00
Break			12:00-13:00
Opening Ceremony (Tamna Hall)			13:00-13:30
Plenary Lecture 1 (Prof. James J Yoo) Overcoming translational challenges for the now era of regenerative medicine (Tamna Hall)			13:30-14:30
S1-D (Room 302)	S1-E (Room 303)	S1-F (Room 401)	14:30-16:00
Exosomes	Biofabrication	SYIS 1 Tissue Regeneration	
Extracellular vesicles as novel therapeutics	Biomimetic Scaffolds for Neural Tissue Regeneration		
Coffee Break			16:00-16:30
S2-D (Room 302)	S2-E (Room 303)	S2-F (Room 401)	16:30-18:00
Exosomes	Biofabrication	SYIS 2 Biomaterials	
The emerging theragnostic role of extracellular vesicles	Vasculogenesis and angiogenesis for functional tissue engineering		
			18:00-18:30
Welcome Reception			18:30-20:30

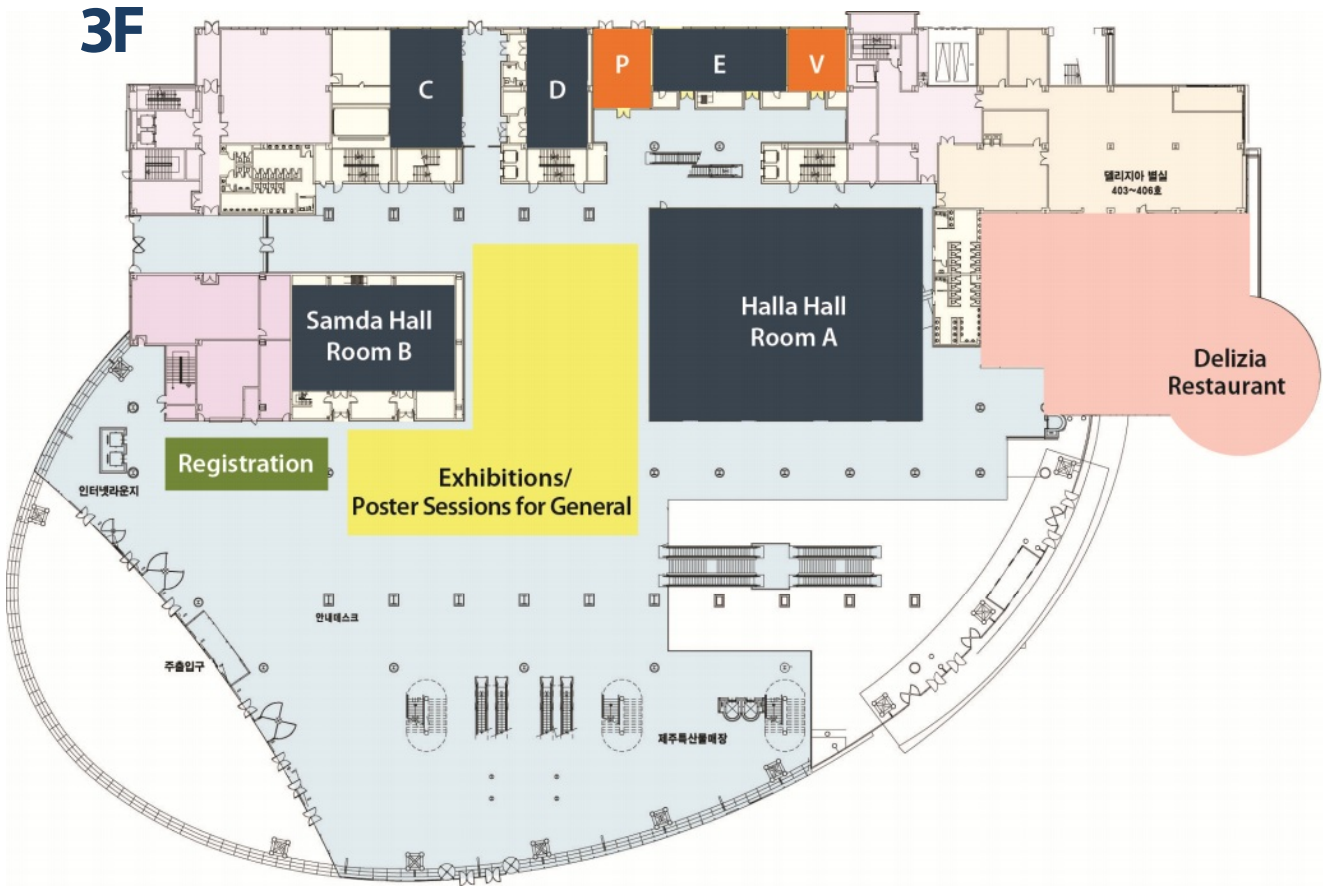
Time	Oct 6 (Thu)		
08:00-09:00	Registration		
09:00-10:00	Plenary Lecture 2 (Prof. Hsing-Wen Sung) An integrated smart electroactive dressing that promotes wound healing and noninvasively monitors healing progress (Halla Hall)		
10:00-10:30	Coffee Break & Poster Session Part 1		
10:30-12:00	S3-A (Halla Hall) Tissue Engineering	S3-B (Samda Hall) Otorhinolaryngology	S3-C (Room 301) Bone and Dental Biology
	Directing Cell/Tissue Fate by Extracellular Signaling Stem cell and Regenerative medicine in Head and Neck surgery Various tissue engineered regeneration in oral and maxillofacial region		
12:00-13:00	Lunch	[Luncheon Seminar] Xcell Therapeutics	Lunch
13:00-14:30	S4-A (Halla Hall) Tissue Engineering	S4-B (Samda Hall) Otorhinolaryngology	S4-C (Room 301) Bone and Dental Biology
	Translational Regenerative Medicine: Bench to Bedside Applications Up-to-date technology for tissue engineering in otorhinolaryngology		Regenerative dentistry
14:30-16:00	S5-A (Halla Hall) Tissue Engineering	S5-B (Samda Hall) Biomaterials	S5-C (Room 301) Neurobiology
	Acoustic bioassembly strategies for tissue engineering Biomaterials for Cardiovascular system		Neurosurgery session 1
16:00-16:30	Coffee Break		
16:30-18:00	S6-A (Halla Hall) Tissue Engineering	S6-B (Samda Hall) Biomaterials	S6-C (Room 301) Neurobiology
	Bio-inspired approaches in 3D tissue reconstruction	Nano-Biomaterials for regeneration	Neurosurgery session 2
18:00-18:30			
18:30-20:30	Presidential Dinner (SYIS Happy Hour)		

Time	Oct 7 (Fri)		
08:00-09:00	Registration		
09:00-10:00	Plenary Lecture 3 (Prof. David Mooney) Matrix mechanics to regulate regeneration (Halla Hall)		
10:00-10:30	Coffee Break & Poster Session Part 2		
10:30-12:00	S7-A (Halla Hall) 2022 TERMIS-AP Awards Session	S7-B (Samda Hall) Biomaterials Polymeric Biomaterials for tissue engineering	S7-C (Room 301) Musculoskeletal Musculoskeletal tissue regeneration
	Lunch		
13:00-14:30	S8-A (Halla Hall) KFRM session : Domestic and Global Interaction in Cell Therapy Industry	S8-B (Samda Hall) Biomaterials Biomaterials for Regenerative Engineering	S8-C (Room 301) Musculoskeletal Cell therapy for cartilage repair and osteoarthritis (KORS joint session)
	S9-A (Halla Hall) Tissue Engineering Tissue Regenerative Platforms for Cartilage Joints	S9-B (Samda Hall) Biomaterials Biofunctional Hydrogels to Direct Cell Fate & Tissue Regeneration	S9-C (Room 301) KSBMT Joint Session
16:00-16:30	Coffee Break		
16:30-18:00	S10-A (Halla Hall) CARM Joint Session	S10-B (Samda Hall) Biomaterials A partnership between natural biomolecules and biomaterials: towards new surface functionalities	S10-C (Room 301) Obstetrics and Gynecology Regeneration of Reproductive Tissues and Organs
	FTERM Session (Halla Hall)		
18:10-18:50	FTERM Session (Halla Hall)		
19:00-20:30	Conference Banquet		

Time	Oct 8 (Sat)		
08:00-09:00	Registration		
09:00-10:00	Plenary Lecture 4 (Prof. Young Sook Son) (Halla Hall) Endogenous stem cells in the bone marrow for tissue repair and diseasedevelopment		
10:00-10:30	Coffee Break & Poster Session Part 2		
10:30-12:30	S11-A (Halla Hall) Tissue Engineering	S11-B (Samda Hall) Biomaterials	S11-C (Room 301) Stem Cells
	Combination Technology of Cell & Biomaterials for Effective Tissue Repair		Nanomedicine: The impact of nanotechnology on tissue engineering and regenerative medicine Stem cell-based therapies - bench-to-bedside
12:30-13:00	Closing Ceremony (Halla Hall)		
13:00-	Optional Tour		

Oct 6 (Thu)			Time
Registration			08:00-09:00
Plenary Lecture 2 (Prof. Hsing-Wen Sung) An integrated smart electroactive dressing that promotes wound healing and noninvasively monitors healing progress (Halla Hall)			09:00-10:00
Coffee Break & Poster Session Part 1			10:00-10:30
S3-D (Room 302)	S3-E (Room 303)	S3-F (Room 401)	10:30-12:00
KSGCT Joint Session	Biofabrication	SYIS 3 Delivery Systems	
	Biofabrication of Multicellular Engineered Living Systems		
Lunch			12:00-13:00
S4-D (Room 302)	S4-E (Room 303)	S4-F (Room 401)	13:00-14:30
Immune Engineering	Biofabrication	SYIS 4 Stem Cell Engineering	
Biomaterials for Immune modulation	In vitro Models: Processing techniques and applications		
S5-D (Room 302)	S5-E (Room 303)	S5-F (Room 401)	14:30-16:00
Manufacturing & Bioprocess	Biofabrication	SYIS 5 Organ-Mimetic Platforms	
Recent technologies for cell manufacturing	3D bioprinting of vascularised organs and tissues		
Coffee Break			16:00-16:30
S6-D (Room 302)	S6-E (Room 303)	S6-F (Room 401)	16:30-18:00
Manufacturing & Bioprocess	Biofabrication	SYIS 6 Mentoring Session	
Manufacturing Technologies for Cell/Tissue Sources	New frontiers in advanced bioinks and biofabrication of functional tissues and organs		
			18:00-18:30
Presidential Dinner (SYIS Happy Hour)			18:30-20:30
Oct 7 (Fri)			Time
Registration			08:00~09:00
Plenary Lecture 3 (Prof. David Mooney) Matrix mechanics to regulate regeneration (Halla Hall)			09:00~10:00
Coffee Break & Poster Session Part 2			10:00~10:30
S7-D (Room 302)	S7-E (Room 303)	S7-F (Room 401)	10:30~12:00
KWSE Session	Biofabrication	Enabling Technology	
	Multiscale printing for biomedical application	Smart and Targeted Therapy	
Lunch			12:00~13:00
S8-D (Room 302)	S8-E (Room 303)	S8-F (Room 401)	13:00~14:30
Biomaterials	Stem Cells	Enabling Technology	
Natural compound-based Biomaterials	Recent Advances in Stem Cell Applications	Recent advances in bioprinting technologies for tissue engineering	
S9-D (Room 302)	S9-E (Room 303)	S9-F (Room 401)	14:30~16:00
Biomaterials	Stem Cells	Organoids	
Biomaterials for bone and cartilage regeneration	Next Generation Biomaterials for Stem Cell Culture and Differentiation	Organoid for disease modeling	
Coffee Break			16:00~16:30
S10-D (Room 302)	S10-E (Room 303)	S10-F (Room 401)	16:30~18:00
Biomaterials	Stem Cells	Organoids	
Biomaterials-mediated Drug Delivery Strategies	Gene Editing and Manipulation for Stem Cell Engineering and Regenerative Medicine	Organoid for tissue regeneration	
FTERM Session (Halla Hall)			18:10~18:50
Conference Banquet			19:00~20:30
Oct 8 (Sat)			Time
Registration			08:00-09:00
Plenary Lecture 4 (Prof. Young Sook Son) Endogenous stem cells in the bone marrow for tissue repair and diseasedevelopment (Halla Hall)			09:00-10:00
Coffee Break & Poster Session Part 2			10:00-10:30
S11-D (Room 302)	S11-E (Room 303)	S10-F (Room 401)	10:30-12:30
Biomaterials	Stem Cells	Enabling Technology	
Biomaterials for 3D in vitro tissue-engineered cancer/disease models	New frontiers in stem cells and novel biomaterials based regenerative therapies	Tumor Engineering with Biomaterials	
Closing Ceremony (Halla Hall)			12:30-13:00
Optional Tour			13:00-

Floor Plan

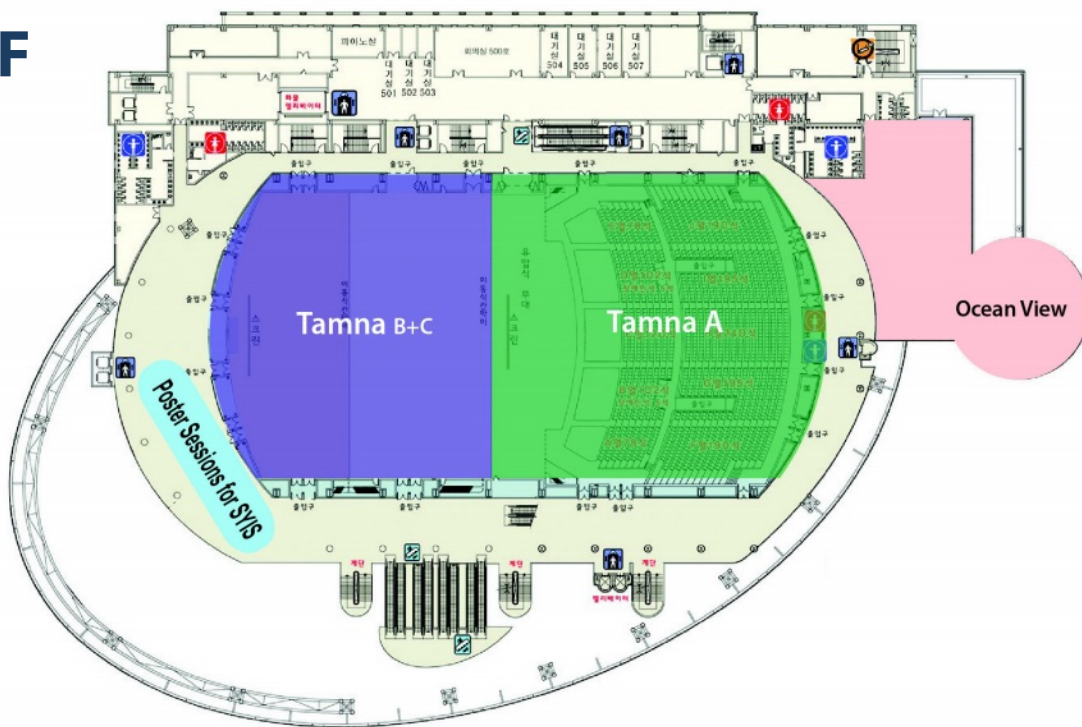


3F	
Halla Hall	Plenary Lecture 2-4 Room A, Closing Ceremony
Samda Hall	Room B
301	Room C
302	Room D
303	Room E
300	Preview Room
304	VIP Room
Delizia	SYIS Happy Hour
Lobby	Registration Exhibitions/ Poster Sessions for General

4F



5F



4F

401 Room F

5F

Tamna A Opening Ceremony
Plenary Lecture 1

Tamna B+C Lunch/ Conference Banquet

Ocean View Welcome Reception

Lobby Poster Sessions for SYIS

MEMO

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TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

Plenary Lectures

Plenary Lectures

Chair: Il Woo Lee (Catholic University of Korea, Republic of Korea)

PL 1

Plenary Session 1

October 5 (Wed) 13:30-14:30, Tamna Hall



Prof. **James J. Yoo**

Wake Forest Institute for Regenerative Medicine

Dr. Yoo is Professor and Associate Director of the Wake Forest Institute for Regenerative Medicine (WFIRM), with a cross-appointment to the Departments of Urology, Physiology and Pharmacology, Clinical and Translational Science Institute, and the Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences. He is also an elected Fellow of the American Institute for Medical and Biological Engineering (AIMBE). Dr. Yoo's research efforts have been directed toward developing tissue engineering technologies and therapeutic approaches for clinical translation. A few notable examples of successful clinical translation include the bladder, urethra, vagina, and muscle cell therapy for incontinence. Dr. Yoo has been a lead scientist in the bioprinting program at WFIRM and has been instrumental in developing skin bioprinting and integrated tissue and organ printing (ITOP) systems for preclinical and clinical applications. He has authored more than 330 scientific publications, more than 100 patent registrations/applications, 1000 scientific presentations, 280 invited lectures and mentored over 300 trainees, ranging from undergraduate students to practicing physicians.

Abstract**Overcoming translational challenges for the new era of regenerative medicine****James J. Yoo^{*1}***¹Wake Forest Institute for Regenerative Medicine, Winston Salem, North Carolina, U.S.A.*

Advances in tissue engineering and regenerative medicine have provided new therapeutic opportunities for repairing damaged tissues and organs. Aligned with the goals of tissue engineering, we have followed a strategy that involves the use of biocompatible matrices, either with or without cells. The matrices are either used as a cell delivery vehicle or scaffolds to promote and enhance tissue regeneration. When cells are used, target cells obtained from donor tissue are isolated and expanded in culture, attached to a support matrix, and re-implanted into a recipient to recover tissue function. This strategy has been successfully applied to many tissue and organ systems in the clinic. However, developing and translating viable solutions for complex tissue systems has been delayed. This is primarily due to various scientific and technological challenges inherent to the tissue-building process and implant integration, such as establishing vascularization and innervation of volumetric tissue mass. Furthermore, processes involving manufacturing, regulation, and commercialization logistics present an additional layer of complexity. This presentation intends to provide a better understanding of the translational processes and discuss approaches to overcome some of the challenges that impede the development and delivery of therapeutic solutions.

Plenary Lectures

Chair: Rui L. Reis (University of Minho/3B's Research Group, Portugal)

PL 2

Plenary Session 2

October 6 (Thu) 09:00-10:00, Halla Hall



Prof. **Hsing-Wen Sung**
National Tsing Hua University

Hsing-Wen Sung is a Tsing Hua Distinguished Chair Professor, Department of Chemical Engineering, National Tsing Hua University. He received his PhD degree from the Department of Chemical Engineering/Biomedical Engineering Program, Georgia Institute of Technology in May 1988. His research interests are biomaterials, tissue engineering, and drug/gene delivery. Professor Sung has received numerous awards such as Fellow of American Institute for Medical and Biological Engineering, Fellow of International Union of Societies for Biomaterials Science and Engineering, Academician of Asia Pacific Academy of Materials, Ho Chin Tui Outstanding Research Award, National Science Council Outstanding Research Award, Professor Tsai-The Lai Award, Elsevier 2015 Biomaterials Best Paper Award, and 2016 TERMIS-AP Outstanding Scientist Award. He has been on the Editorial Boards of Journal of Controlled Release and Advanced Healthcare Materials as well as the International Advisory Board of Advanced Materials; also, he has been serving as a Handling Editor for Biomaterials. His published papers have over 18,764 (26,803) citations with an H-index of approximately 80 (90), according to Scopus (Google Scholar).

Abstract

An integrated smart electroactive dressing that promotes wound healing and noninvasively monitors healing progress

Hsing-Wen Sung^{*1}, Nhien Nguyen¹, Zong-Hong Lin¹, Snigdha Roy Barman¹, Amit Kumar Sharma¹, Ni-Xuan Song¹, Shih-Kai Lo¹, Ji-Yen Cheng¹, Yen Chang¹, Fwu-Long Mi¹, Hsiang-Lin Song¹, Yu-Jung Lin¹

¹Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan (ROC)

Traditional wound dressings do not promote cellular activities that heal wounds or assist in monitoring the progress of that healing. This work develops an engineered electroactive dressing that comprises a backing film of collagen, a layer of polydopamine-crosslinked carboxymethyl chitosan conductive hydrogel, and an interdigitated array (IDA) electrode. The dressing is evaluated in a mouse model with a full-thickness skin defect. The incorporated conductive hydrogel provides a channel for transmitting the endogenous bioelectrical signals to the wound; stimulating electrical stimuli-responsive cells, and accelerating the restoration of the wounded tissue. The IDA electrode, which is connected in series with a conventional power source or a self-powered triboelectric nanogenerator, is able to detect the electrical resistance or output current across the wounded tissue to monitor its entire healing process noninvasively. This wound monitoring system is integrated with a WIFI-based system for wireless data collection and transmission, using a personal smartphone on which is installed an app. Such a real-time wound monitoring system can be worn by patients in daily life; it issues early warnings to them of potential infections and wirelessly sends wound progression data to remote medical staff for dynamic intervention and the provision of telemedicine as required.

Keywords : Electroactive dressing, Wound healing, Triboelectric nanogenerator, Telemedicine, Wound monitoring

Plenary Lectures

Chair: Jeong Ok Lim (Kyungpook National University, Republic of Korea)

PL 3

Plenary Session 3

October 7 (Fri) 09:00-10:00, Halla Hall



Prof. **David Mooney**
Wyss Institute at Harvard University

Dave is a leader in the fields of biomaterials, mechanotransduction, drug delivery, tissue engineering and immunoengineering. He is interested in understanding how cells sense signals in their environment and how this alters cell behavior. His laboratory develops biomaterials that exploits these signals to regulate specific cells and their function. They were the first to demonstrate in 3-D culture that the mechanical properties of a substrate regulated stem cell fate. His lab also developed the first implantable biomaterial cancer vaccine that contained biochemical cues to recruit and re-educate the immune system to destroy cancer cells. Dave's goal is to use our knowledge of cell biology in conjunction with materials to boost therapeutic effects.

Dave is the Robert Pinkas Family Professor of Bioengineering in the Harvard School of Engineering and Applied Sciences, and a Core Faculty Member of the Wyss Institute at Harvard University. He is a member of several national academies and has won numerous awards for his research and his mentorship/teaching. He has published over 400 articles and has been issued numerous patents, several of which have been licensed to companies, resulting in successful commercial products. He is also an active member in major engineering professional societies, an editorial advisor to multiple journals, and serves on several industry and government advisory boards.

Abstract**Matrix mechanics to regulate regeneration****David Mooney*¹***¹School of Engineering and Applied Sciences and Wyss Institute, Harvard University*

Mechanical cues regulate many aspects of biology, and we are developing materials capable of providing either defined resistance to cell intrinsic mechanical forces or application of specific extrinsic forces to tissues. These biomaterials can enhance the effectiveness of stem cell therapies, directly support and regenerate damaged tissues, and have led to bio-inspired new medical devices with unprecedented properties.

Keywords : Biomaterials, Stress, Stem cells

Plenary Lectures

Chair: Anthony Weiss (University of Sydney, Australia)

PL 4

Plenary Session 4

October 8 (Sat) 09:00-10:00, Halla Hall



Prof. **Young Sook Son**
Kyung Hee University

Professor, Department of Genetic Engineering & Graduate School of Biotechnology, Kyung Hee University (KHU)
Director, Kyung Hee Institute of Regenerative Medicine (KIRM), KHU Hospital, Seoul Korea

Academic Background

Ph.D., Dept. of Pharmacology & Cell Biology Program, University of California San Francisco (UCSF) (1989)
M.A, Dept of Microbiology, Seoul National University (1982)
B.A, Dept of Food Science and Nutrition, Seoul National University (1980)

Professional Career & Awards

2006 -present, Professor, Dept of Genetic Engineering, KHU
2018 KSSCR President
2017 Korean Society of Cartilage and Osteoarthritis (KSCO) President
2012-2013, Stem Cell Committee Member of National Sci & Tech Policy Committee
1993-2006: Chief, Laboratory of Tissue Engineering, KIRAMS
1992-1993: Clinical Instructor, Dept of Pharmacology, Seoul National University
1989-1991: Post doctor, The University of Chicago, HHMI
2005: President Award by President Moo Hyun Ro
2009: Macrogen Women Scientist Award from KSBMB
2014: Prime minister award from MOHW
2017: Korea Loreal-Unesco Women Scientist Award
2020: Korea Scientific Excellence Award from President-

Research Area

Endogenous stem cells and tissue repair// Cartilage and skin tissue engineering ("Keraheal" for burn patients, "Cartilife" for Osteoarthritis: KFDA approved)
Control of inflammation and regenerative medicine

Abstract

Endogenous stem cells in the bone marrow for tissue repair and diseasedevelopmentYoungsook Son*¹

¹Department of Genetic Engineering, Graduate School of Biotechnology, Kyung Hee University Director of Kyung Hee Institute of Regenerative Medicine (KIRM), Kyung Hee University Hospital, Seoul, Korea

Tissue injury may create a specific microenvironment, which brings up the systemic participation of reparative stem cells in the repair process. We identified a new role of substance-P (SP, 11 aa peptide) as an injury-inducible messenger to mobilize bone marrow MSC and EPC to the blood, home to the injured tissue, and be engaged in the tissue repair in a variety of acute and chronic tissue injury models such as alkali-burn corneal injury, spinal cord injury, acute myocardial infarction, stroke, limb ischemia, aortic injury, diabetics, radiation-induced BM injury and gastrointestinal injury, elucidating endogenous healing mechanism recalling BM stem cells. In addition, SP can play a role as a novel anti-inflammatory cytokine to directly induce M2 type monocyte/macrophages and stimulate specific trafficking of CD163+/CD206+ subset of monocytes from the bone marrow to the blood, which suppresses the injury-evoked tissue inflammation and clean up dead cells for tissue repair. This unique role of SP seems to orchestrate tissue repair by reducing the inflammation-provoked tissue damages at early stage and creating favorable microenvironment for the engraftment of incoming stem cells and then recruiting endogenous stem cells from bone marrow to the injured tissue as reparative stem cells for the tissue repair. Collectively, SP may be proposed as a potential stem cell stimulating agent to cure a variety of acute and chronic diseases requiring the reduction of inflammation load and engagement of endogenous reparative stem cells. This work was supported by Projects NRF-2016M3A9B4917320, HI13C1479, and HI18C1492.

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

Symposia 1

October 5 (Wed) 14:30-16:00

Session code	Topic	Room #
S1-A	Tissue Engineering	Halla Hall
S1-B	Cardiovascular	Samda Hall
S1-C	Plastic Surgery	Room 301
S1-D	Exosomes	Room 302
S1-E	Biofabrication	Room 303

S1-A

Session Topic	Tissue Engineering
Title	Biofabrication for tissue engineering and personalized disease models
Date	October 5 (Wed) Time 14:30-16:00
Room	Halla Hall
Chair(s)	Kris Kilian (University of New South Wales, Australia) Junmin Lee (Pohang University of Science and Technology (POSTECH) Republic of Korea)

S1-A-01	14:30-14:55 Keynote	Engineering scaffold-free tissue constructs via modular assembly, cell-only bioprinting and 4D strategies Eben Alsberg ^{*1} ¹ University of Illinois at Chicago, USA
S1-A-02	14:55-15:10	Micro/nano engineered biomaterials for manufacturing biomimetic tissues and biomedical applications Su Ryon Shin ^{*1} ¹ Harvard Medical School/Brigham and Women's Hospital, USA
S1-A-03	15:10-15:25	Creating advanced bio-inks using microfluidics to engineer multiscale tissue Jeroen Leijten ^{*1} ¹ University Twente, Netherlands
S1-A-04	15:25-15:40	A 3D culture platform promotes maturation of midbrain-fated iPSCs into functional, physiologically relevant synaptic networks Stephanie Seidlits ^{*1} , Ze Zhong Wang ¹ , Zhan Shu ³ , Alexander Laperle ² , Clive Svendsen ² , Nigel Maidment ³ ¹ University of Texas at Austin, ² Cedars Sinai Los Angeles, ³ University of California Los Angeles, USA
S1-A-05	15:40-15:55	Biofabrication of engineered tissues by 3D bioprinting of tissue specific, high cell density bioinks Oju Jeon ^{*1} ¹ University of Illinois Chicago, USA

S1-B

Session Topic	Cardiovascular
Title	Clinical application of therapeutics for cardiac repair
Date	October 5 (Wed) Time 14:30-16:00
Room	Samda Hall
Chair(s)	Hun-Jun Park (The Catholic University of Korea, Seoul St. Mary's Hospital, Republic of Korea) Suk Ho Bhang (Sungkyunkwan University, Republic of Korea)

S1-B-01	14:30-14:55 Keynote	Are there hopeful new strategies to rejuvenate myocardium? Hun-Jun Park ^{*1} ¹ The Catholic University of Korea, Republic of Korea
S1-B-02	14:55-15:10	Effect and application of cryopreserved three-dimensional microcardiac spheroids in myocardial infarction therapy Paulo André Nóbrega Marinho ¹ , Hun-Jun Park ^{*2} ¹ T&R Biofab, ² The Catholic University of Korea, Republic of Korea
S1-B-03	15:10-15:25	Novel photobiomodulation for enhancing angiogenic efficacy of adult stem cells toward future biomedical application Suk Ho Bhang ^{*1} ¹ Sungkyunkwan University, Republic of Korea
S1-B-04	15:25-15:40	Three-dimensional microenvironments boost direct cardiac reprogramming Yoonhee Jin ^{*1} ¹ Yonsei University Medical College, Republic of Korea
S1-B-05	15:40-15:55	Vascular patches comprising polycaprolactone/decellularized extracellular matrix (PCL/dECM)-based core/shell nanofibers for arterial healing and vascular reconstruction Muhammad Shafiq ¹ , Kazuya Koyanagi ¹ , Nana Shirakigawa ² , Yasuke Sakai ¹ , Hiroyuki Ijima ^{*1} ¹ Department of Chemical Engineering, Faculty of Engineering, Graduate School, Kyushu University, 744 Motoooka, Nishi-ku, Fukuoka, ² Department of Chemical Engineering, Graduate School of Engineering, Kyushu University, Kyushu, Japan

S1-C

Session Topic	Plastic surgery
Title	Tissue engineering for Plastic Surgery
Date	October 5 (Wed) Time 14:30-16:00
Room	Room 301
Chair(s)	Jong Won Rhie (Catholic University of Korea, College of Medicine, Republic of Korea) Chan Yeong Heo (Seoul National University Bundang Hospital, Republic of Korea)

S1-C-01	14:30-14:55 Keynote	3D bioprinted biomimetic bone scaffolds for mandibular reconstruction Sang Jin Lee ^{*1} , Hyeonjin Lee ¹ , Carlos Kengla ¹ , James Yoo ¹ , Anthony Atala ¹ ¹ Wake Forest University School of Medicine, USA
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S1-C-02	14:55-15:10	Vessel-derived decellularized extracellular matrices (VdECM): Novel bio-engineered materials for the wound healing Suk-Ho Moon ^{*1} , Chae Rim Lee ¹ , Yeon Hee Ryu ¹ , Su Jin Lee ¹ , Tae Hoon Kim ¹ , Bo Young Kwon ¹ , Yoon Jae Lee ¹ , Jun Hyeok Kim ¹ ¹ The Catholic University of Korea, Republic of Korea
S1-C-03	15:10-15:25	ASC/chondrocyte-laden alginate hydrogel/PCL hybrid scaffold fabricated using 3D printing for auricle regeneration Chul Ho Jang ^{*1} , YoungWon Koo ² , GeunHyung Kim ² ¹ Chonnam National University, ² Department of Biomechanical Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Republic of Korea
S1-C-04	15:25-15:40	Development of the in-situ monitoring system for molecular response to mechanical stimuli in three-dimensional tissue-engineered cartilage Yuna Kuriki ² , Yusuke Morita ¹ , Koji Yamamoto ^{*1} ¹ Department of Biomedical Engineering, Doshisha University, ² Graduate School of Life and Medical Sciences, Doshisha University Japan
S1-C-05	15:40-15:55	Novel chitosan dermal filler with enhanced moldability and elasticity Sung-hwan Yoon ¹ , Jie Young Kim ¹ , Su Hee Kim ² , Min-Ha Choi ¹ , Soo Hee Lee ² , Sumin Lee ¹ , Misun Cha ² , Ji-Ung Park ^{*1} ¹ Department of Plastic and Reconstructive Surgery, SMG-SNU Boramae Medical Center, ² R&D Center, Medifab Co. Ltd, Republic of Korea

S1-D	Session Topic	Exosomes
	Title	Extracellular vesicles as novel therapeutics
	Date	October 5 (Wed)
	Time	14:30-16:00
	Room	Room 302
Chair(s)	Yong Woo Cho (Hanyang University ERICA, ExoStemTech Inc., Republic of Korea) Dong-Gyu Jo (School of Pharmacy, Sungkyunkwan University, Republic of Korea)	

S1-D-01	14:30-14:55 Keynote	Extracellular vesicles derived from mesenchymal stem cells for the treatment of intractable neonatal diseases Yun Sil Chang ^{*1} ¹ Samsung Medical Center, Sungkyunkwan University School of Medicine Republic of Korea
S1-D-02	14:55-15:10	Magnet-assisted systemic delivery of artificial extracellular vesicles to injured central nervous system Han Young Kim ^{*1} ¹ Catholic University of Korea Republic of Korea
S1-D-03	15:10-15:25	Engineered small extracellular vesicles displaying sACE2 to protect against SARS-CoV-2 infection use upper-case letters only for the first word Hark Kyun Kim ¹ , Dong-Gyu Jo ^{*1} ¹ Sungkyunkwan University Republic of Korea
S1-D-04	15:25-15:40	Use of sheep intervertebral disc cells to evaluate extracellular vesicle (EVs) therapies in vitro Catherine Le Visage ^{*1} , Paul Humbert ¹ , Marielle Garcia ¹ , Lea Jabbour ² , Sebastien Grastilleur ¹ , Amanda Silva ² , Florence Gazeau ² , Marion Fusellier ³ , Jerome Guicheux ¹ ¹ Inserm, Nantes Universite, ² CNRS, Universite de Paris, ³ Oniris College of Veterinary Medicine, France
S1-D-05	15:40-15:55	Development of stem cell EV therapeutics from bench to bedside Yong Woo Cho ^{*1} ¹ Hanyang University ERICA, Republic of Korea

S1-E	Session Topic	Biofabrication
	Title	Biomimetic scaffolds for neural tissue regeneration
	Date	October 5 (Wed)
	Time	14:30-16:00
	Room	Room 303
Chair(s)	Sing Yian Chew(Nanyang Technological University, Singapore) Ying-Chieh Chen (National Tsing-Hua University, Chinese Taipei)	

S1-E-01	14:30-14:55 Keynote	NeuroRegen® scaffold for spinal cord injury repair: From animal models to clinical study Jianwu Dai ^{*1} ¹ Center for Regenerative Medicine, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, China
S1-E-02	14:55-15:10	Engineering vascularized nerve tissue construct Ying-Chieh Chen ^{*1} , Shih-Yen Wei ¹ , Ting-Lun Hsu ¹ , Min-Chun Tsai ¹ ¹ National Tsing-Hua University Chinese Taipei
S1-E-03	15:10-15:25	Spinal cord progenitor cells encapsulated in hydrogel for spinal cord injury treatment Christy Kwokdinata ¹ , Vaibavi Srirangam Ramanujam ¹ , Jiahui Chen ¹ , Sing Yian Chew ^{*2} ¹ School of Chemical and Biomedical Engineering, Nanyang Technological University, ² School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore
S1-E-04	15:25-15:40	Engineered myoglobin as an oxygen vector for stem cell transplants Elizabeth Zoneff ^{*1} , David Nisbet ¹ ¹ University of Melbourne, Australia
S1-E-05	15:40-15:55	Fabrication of ultrathin and flexible basement membrane for enhanced human iPS-derived blood-brain barrier model Jeong-Won Choi ¹ , Jaeseung Yoon ² , Dong Sung Kim ² , Tae-Eun Park ^{*1} ¹ Ulsan National Institute of Science and Technology, ² Pohang University of Science and Technology, Republic of Korea

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New Chapter of Future Regenerative Medicine

Symposia 2

October 5 (Wed) 16:00-18:00

Session code	Topic	Room #
S2-A	Tissue Engineering	Halla Hall
S2-B	Cardiovascular	Samda Hall
S2-C	Plastic Surgery	Room 301
S2-D	Exosomes	Room 302
S2-E	Biofabrication	Room 303

S2-A

Session Topic	Tissue Engineering
Title	Biomaterials and enabling technologies innovation for food sustainability and security
Date	October 5 (Wed) Time 16:30-18:00
Room	Halla Hall
Chair(s)	Lay Poh Tan (Nanyang Technological University, Singapore) Tatsuya Shimizu (Tokyo Women's Medical University, Japan)

S2-A-01	16:30-16:55 Keynote	Development of cultured steak by tissue engineering Ai Shima¹ , Shoji Takeuchi* ¹ ¹ The University of Tokyo, Japan
S2-A-02	16:55-17:10	Primary culture of bovine muscle cells and fabrication of aligned muscle tissues for cultured meat production Hironobu Takahashi*¹ , Azumi Yoshida ¹ , Kumiko Yamanaka ¹ , Tatsuya Shimizu ¹ ¹ Tokyo Women's Medical University, Japan
S2-A-03	17:10-17:25	Green substrates for sustainable nutrient delivery to enhance seedling development in hydroponics Kee Woei Ng*^{1,2,5,6} , Zhitong Zhao ¹ , Tao Xu ² , Xiaoyong Pan ¹ , Susanti ³ , Jason C. White ⁴ , Xiao Hu ^{1,5} , Yansong Miao ³ , Philip Demokritou ² ¹ School of Materials Science and Engineering, Nanyang Technological University, ² Center for Nanotechnology and Nanotoxicology, Harvard T.H. Chan School of Public Health, Harvard University, United States, ³ School of Biological Sciences, Nanyang Technological University, Singapore, ⁴ The Connecticut Agricultural Experiment Station, Connecticut, United States, ⁵ Environmental Chemistry and Materials Centre, Nanyang Environment and Water Research Institute, ⁶ Singapore-HUJ Alliance for Research and Enterprise (SHARE), Singapore
S2-A-04	17:25-17:40	Development of suspension culture method for cultured meat production Katsuhisa Sakaguchi*¹ , Ryuichiro Tanaka ² , Seyon Ha ¹ , Tatsuya Shimizu ² ¹ Waseda University, ² Tokyo Women's Medical University, Japan
S2-A-05	17:40-17:55	Legume-based scaffolds for the lab-grown production of cultured meat Rakesh Bhaskar*¹ , So Yeon Won ¹ , Hyeon Jin Kim ¹ , Kannan Badri Narayanan Narayanan ¹ , Sung Soo Han ¹ ¹ Yeungnam University, Republic of Korea

S2-B

Session Topic	Cardiovascular
Title	Recent advances in myocardial tissue engineering
Date	October 5 (Wed) Time 16:30-18:10
Room	Samda Hall
Chair(s)	Katsuhisa Matsuura (Tokyo Women's Medical University, Japan) Anthony (Tony) Weiss (University of Sydney, Australia)

S2-B-01	16:30-16:55 Keynote	Rapid regeneration of a neoartery with elastic lamellae Anthony (Tony) Weiss*¹ ¹ University of Sydney, Australia
S2-B-02	16:55-17:10	Human cardiac tissue engineering for tissue maturation Katsuhisa Matsuura*¹ ¹ Tokyo Women's Medical University, Japan
S2-B-03	17:10-17:25	A human iPSC-based cardiac tissue model to understand age-related heart failure Aswathi Gopalakrishnan¹ , Ernst Wolvetang ⁴ , Joan Li ³ , Justin Cooper-White* ² ¹ Australian Institute for Bioengineering and Nanotechnology, School of Chemical Engineering, The University of Queensland, ² School of Chemical Engineering, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, ³ School of Clinical Medicine, The University of Queensland, ⁴ Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, Australia
S2-B-04	17:25-17:40	Effect of ECM remodeling by cardiac fibroblast on the formation and maturation of 3D cardiac bundle in vitro Yongjun Jang¹ , Yong Guk Kang ¹ , Myeongjin Kang ¹ , Yongdoo Park* ¹ ¹ Korea University, Republic of Korea
S2-B-05	17:40-17:55	Hyaluronic acid infiltrated collagen type I+elastin scaffolds for myocardial repair Hazal Gezmis*¹ , Jan Czernuszka ¹ , Carolyn Carr ¹ ¹ University of Oxford, United Kingdom
S2-B-06	17:55-18:10	3D vascularized tissue construct using protein-based composites Linyang Liu² , Richard Wang ¹ , Ziyu Wang ¹ , Suzanne Mithieux ¹ , Anthony Weiss* ¹ ¹ School of Life and Environmental Sciences, University of Sydney, Sydney, New South Wales 2006, ² the University of Sydney, Australia

S2-C

Session Topic	Plastic surgery	
Title	Advances in Wound Healing and Scar Therapy	
Date	October 5 (Wed)	Time 16:30-18:00
Room	Room 301	
Chair(s)	Ji-Ung Park (Seoul National University Boramae Medical Center, Republic of Korea) Su Ryon Shin (Harvard Medical School/Brigham and Women's Hospital, USA)	

S2-C-01	16:30-16:55 Keynote	Engineering nano-biomaterials for tissue fabrication and regenerative medicine Su Ryon Shin * ¹ ¹ Harvard Medical School/Brigham and Women's Hospital, USA
S2-C-02	16:55-17:10	Nuclear softening expedites interstitial cell migration in fibrous dense connective tissues Su-Jin Heo * ¹ ¹ University of Pennsylvania, USA
S2-C-03	17:10-17:25	A regenerative dermal template for development of the next generation artificial skin graft Bach Le ¹ , Chan Weng Wan ¹ , Yong Ching Feng ¹ , May Win Niang ² , Deepak Choudhury* ¹ ¹ Bioprocessing Technology Institute, ² Singapore Institute of Manufacturing Technology, Singapore
S2-C-04	17:25-17:40	To heal or not to heal: 3D in vitro M2 macrophage model to mimic modulation of tissue repair Jiranuwat Sapudom ¹ , Shaza Karaman ¹ , Walaa Mohamed ¹ , Anna Garcia-Sabate ¹ , Brian Quartey ¹ , Jeremy Teo* ¹ ¹ Laboratory for Immuno Bioengineering Research and Applications, Division of Engineering, New York University Abu Dhabi, Abu Dhabi, UAE, United Arab Emirates
S2-C-05	17:40-17:55	Breast tissue restoration after the partial mastectomy using polycaprolactone scaffold Wooyeol Baik * ¹ ¹ Yonsei University, Republic of Korea

S2-D

Session Topic	Exosomes	
Title	The emerging theragnostic role of extracellular vesicles	
Date	October 5 (Wed)	Time 16:30-18:00
Room	Room 302	
Chair(s)	Joy Wolfram (University of Queensland, Australia) Jung Seung Lee (Sungkyunkwan University, Republic of Korea)	

S2-D-01	16:30-16:55 Keynote	Computational modeling of cells and extracellular vesicles for pediatric cell therapy Michael Davis * ¹ ¹ Emory University, USA
S2-D-02	16:55-17:10	Cardioprotective activity of bioinspired cell-derived nanovesicles Giorgia Pastorin * ¹ , YUB NEUPANE ¹ , Huang Chenyuan ¹ , Wei Heng Chng ¹ , Choon Lee ¹ , Jiong Wei Wang ¹ , Joy Wolfram ² ¹ National University of Singapore, ² The University of Queensland, Singapore
S2-D-03	17:10-17:25	Extracellular vesicle therapeutics for treating inflammatory conditions Joy Wolfram * ¹ ¹ The University of Queensland, Australia
S2-D-04	17:25-17:40	Ultraefficient exosome-guided direct cell reprogramming technique Sun Hwa Kim * ¹ ¹ Korea Institute of Science and Technology, Republic of Korea
S2-D-05	17:40-17:55	Therapeutic development of extracellular vesicles from adipose tissue-derived stem cells for inflammatory diseases A-Ryeong Gwon ¹ , Yong Woo Cho* ² ¹ Exostemtech Co., Ltd., ² Exostemtech Co., Ltd, Department of Materials Science and Chemical Engineering Hanyang University ERICA, Republic of Korea

S2-E

Session Topic	Biofabrication	
Title	Vasculogenesis and angiogenesis for functional tissue engineering	
Date	October 5 (Wed)	Time 16:30-18:00
Room	Room 303	
Chair(s)	Xuebin Yang (University of Leeds, United Kingdom) Michiya Matsusaki (Osaka University, Japan)	

S2-E-01	16:30-16:55 Keynote	Preclinical angiogenesis models for enhancing bone tissue engineering Xuebin Yang ^{*1} ¹ University of Leeds, United Kingdom
S2-E-02	16:55-17:20 Keynote	Tissue engineering approach to construct a vascularized 3D-human tissue model Michiya Matsusaki ^{*1} ¹ Osaka University, Japan
S2-E-03	17:20-17:35	Long-term reversal of diabetes by subcutaneous transplantation of pancreatic islet cells and adipose-derived stem cell sheet In Kyong Shim ^{*1} , Song Cheol Kim ¹ ¹ Asan Medical Center, Republic of Korea
S2-E-04	17:35-17:50	Pre-vascularization technique for the creation of 3D cardiac tissues Hidekazu Sekine ^{*1} ¹ Tokyo Women's Medical University, Japan

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Symposia 3

October 6 (Thu) 10:30-12:00

Session code	Topic	Room #
S3-A	Tissue Engineering	Halla Hall
S3-B	Otorhinolaryngology	Samda Hall
S3-C	Bone and Dental Biology	Room 301
S3-D	KSGCT Joint Session	Room 302
S3-E	Biofabrication	Room 303

S3-A

Session Topic	Tissue Engineering
Title	Directing cell/tissue fate by extracellular signaling
Date	October 6 (Thu) Time 10:30-12:00
Room	Halla Hall
Chair(s)	Sing Yian Chew (Nanyang Technological University, Singapore) Hyuk Sang Yoo (Kangwon National University, Republic of Korea)

S3-A-01	10:30-10:55 Keynote	Integrating extracellular matrix digest into microfibrillar, elastic composite materials to provide mechanical support and redirect tissue remodeling William Wagner* ¹ ¹ University of Pittsburgh, McGowan Institute for Regenerative Medicine, USA
S3-A-02	10:55-11:20 Keynote	Harnessing the MSC secretome for the treatment of osteoarthritis Catherine Le Visage* ¹ ¹ Inserm, Nantes Université, France
S3-A-03	11:20-11:35	Fragmented fibrous matrix directing cell and tissue fates Hyuk Sang Yoo* ¹ , Wei Mao ¹ , Hoai-Thuong Duc Bui ¹ , Wanho Cho ¹ , Miso Lee ¹ ¹ Kangwon National University, Republic of Korea
S3-A-04	11:35-11:50	Epigenetic reprogramming fibroblasts through confined culture in the absence of exogenous factors Kang Lin* ¹ , Kristopher Kilian ² ¹ The University of New South Wales, ² UNSW, Australia

S3-B

Session Topic	Otorhinolaryngology
Title	Stem cell and regenerative medicine in head and neck surgery
Date	October 6 (Thu) Time 10:30-12:00
Room	Samda Hall
Chair(s)	Inho Jo (NKorean Fund for Regenerative Medicine, Republic of Korea)

S3-B-01	10:30-10:55 Keynote	Tonsil derived stem cells: The good, the bad and the weird Han Su Kim* ¹ ¹ Ewha Womans University College of Medicine, Republic of Korea
S3-B-02	10:55-11:10	NIR fluorescence monitoring for stem cell-based bone tissue engineering Sang Jin Lee* ¹ , Soon Hee Kim ¹ , Hak Soo Choi ³ , Moon Suk Kim ² ¹ Wake Forest University School of Medicine, ² Ajou University, Republic of Korea, ³ Harvard Medical School, USA
S3-B-03	11:10-11:25	Effect of tonsil mesenchymal stem cells-derived exosomes for dry mouth after menopause Byungjoo Lee* ¹ , Ji Min Kim ² ¹ Pusan National University Hospital, Republic of Korea, ² Pusan National University Medical Research Institute, Republic of Korea
S3-B-04	11:25-11:40	Vocal fold tissue engineering with stem cell spheroid, growth factor, ECM, and total artificial vocal fold Seong Keun Kwon* ¹ ¹ Seoul National University Hospital, Republic of Korea
S3-B-05	11:40-11:55	Regenerative medicine for the larynx and the trachea Yo Kishimoto* ¹ , Koichi Omori ¹ ¹ Kyoto University, Japan

S3-C

Session Topic	Bone and dental biology
Title	Various tissue engineered regeneration in oral and maxillofacial region
Date	October 6 (Thu) Time 10:30-12:00
Room	Room 301
Chair(s)	Seong Ho Choi (Yonsei University, Republic of Korea) Bu-Kyu Lee (Asan Medical Center, Republic of Korea)

S3-C-01	10:30-10:55 Keynote	Bone bioprocess mimicking materials Takuya Matsumoto* ¹ ¹ Okayama University, Japan
S3-C-02	10:55-11:10	Regeneration of periodontal tissue in oral and maxillofacial region Jun-Beom Park* ¹ ¹ Department of Periodontics, College of Medicine, The Catholic University of Korea, Republic of Korea

S3-C-03	11:10-11:25	Scalable synthesis of whitlockite and its coated hydroxyapatite porous granules for bone regeneration in defect of rat calvaria Hwang Dae-Seok^{*1} ¹ Department of Oral and Maxillofacial Surgery, Dental School, Pusan National University, Republic of Korea
S3-C-04	11:25-11:40	Role of 17 β-estradiol for the regeneration of the mandibular condyle in temporomandibular joint osteoarthritis Hoon Joo Yang^{*1}, Ji Hye Oh² ¹ Seoul National University Dental Hospital, ² Dental Research Institute, Seoul National University, Republic of Korea
S3-C-05	11:40-11:55	Trend of biomaterials in guided bone regeneration Jae Kook Cha^{*1}, Seong-Ho Choi¹ ¹ Yonsei University, Republic of Korea

S3-D	Session Topic	Tissue Engineering	
	Title	KSGCT joint session	
	Date	October 6 (Thu)	Time 10:30-12:00
	Room	Room 302	
	Chair(s)	Suk Ho Bhang (Sungkyunkwan University, Republic of Korea)	

S3-D-01	10:30-10:55 Keynote	DMOAD activity of ICM-203 in canine OA model Dae-Won Kim^{*1}, Minsun Park² ¹ Yonsei University, ² ICM Co., Ltd., Republic of Korea
S3-D-02	10:55-11:10	Genome editing of therapeutic cells Seokjoong Kim^{*2}, Jaeyoung Lee¹, Kangin Lee¹, Dong Woo Song¹ ¹ ToolGen, Inc., ² ToolGen, Republic of Korea
S3-D-03 CANCELLED	11:10-11:25	Safe human genome modifications using novel retroviral vector system Kwang-il Lim^{*1} ¹ Sookmyung Women's University, Republic of Korea
S3-D-04	11:25-11:40	Preclinical safety assessments for cell and gene therapy products Kyoung-Sik Moon^{*1} ¹ Korea Institute of Toxicology, Republic of Korea
S3-D-05	11:40-11:55	Gene delivery system for the treatment of type 2 diabetes mellitus Jeong Man An¹, Yong-kyu Lee^{*2} ¹ Hanyang University, Republic of Korea, ² Korea national university of transportation, Republic of Korea

S3-E	Session Topic	Biofabrication	
	Title	Biofabrication of multicellular engineered living systems	
	Date	October 6 (Thu)	Time 10:30-12:00
	Room	Room 303	
	Chair(s)	Hyunjoon Kong (University of Illinois at Urbana-Champaign, USA) Hojeong Jeon (Korea Institute of Science and Technology, Republic of Korea)	

S3-E-01	10:30-10:55 Keynote	Engineering cognitive biological machinery M Taher A Saif^{*1} ¹ University of Illinois at Urbana-Champaign, USA
S3-E-02	10:55-11:10	Dual-crosslinkable alginate hydrogel: use as a stem cell-laden bioink and as a supporting slurry for generation of high resolution and fidelity engineered tissues with complex geometries Eben Alsberg^{*1}, Oju Jeon¹ ¹ University of Illinois at Chicago, USA
S3-E-03	11:10-11:25	The effect of hydrophobicity to the cell growth and behavior for tissue regeneration and cell therapy Sung Gap Im^{*1} ¹ KAIST, Republic of Korea
S3-E-04	11:25-11:40	Hydrogel-based direct contact pressing culture method to manipulate shape and function of adherent cell Hojeong Jeon^{*1} ¹ Korea Institute of Science and Technology, Republic of Korea
S3-E-05	11:40-11:55	Empowering engineered muscle for pump-bot Hyunjoon Kong^{*1} ¹ University of Illinois at Urbana-Champaign, USA

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Symposia 4

October 6 (Thu) 13:00-14:30		
Session code	Topic	Room #
S4-A	Tissue Engineering	Halla Hall
S4-B	Otorhinolaryngology	Samda Hall
S4-C	Bone and Dental Biology	Room 301
S4-D	Immune Engineering	Room 302
S4-E	Biofabrication	Room 303

S4-A	Session Topic	Tissue Engineering	
	Title	Translational regenerative medicine: bench to bedside applications	
	Date	October 6 (Thu)	Time 13:00-14:30
	Room	Halla Hall	
	Chair(s)	Sang Jin Lee (Wake Forest School of Medicine, USA) Sang Hyug Park (Pukyong National University, Republic of Korea)	

S4-A-01	13:00-13:18 Keynote	Treatment development research for tracheomalacia to promote the tracheal cartilages Makoto Komura ^{*1} , Hiroko Komura ¹ , Tetsuya Ishimaru ¹ ¹ The University of Tokyo, Japan
S4-A-02	13:18-13:36 Keynote	Human microphysiological systems for disease modeling and drug screenin Deok-Ho Kim ^{*1} ¹ Johns Hopkins University, USA
S4-A-03	13:36-13:54 Keynote	3D bio-printing systems for tissue engineering applications Geun Hyung Kim ^{*1} ¹ Sungkyunkwan University, Republic of Korea
S4-A-04	13:54-14:12 Keynote	Development of microenvironmental conditioned biomimetic model in age related macular degenerations Hong Kyun Kim ¹ , Jung-Ho Kim ² , Hong Kyun Kim ^{*1} ¹ School of Medicine, Kyungpook National University, ² Kyungpook National University Hospital, Republic of Korea
S4-A-05	14:12-14:30 Keynote	Bioimaging and nanomedicine in tissue engineering and regenerative medicine Hak Soo Choi ^{*1} ¹ Harvard Medical School, USA

S4-B	Session Topic	Otorhinolaryngology	
	Title	Up-to-date technology for tissue engineering in otorhinolaryngology: a biofabrication perspective	
	Date	October 6 (Thu)	Time 13:00-14:30
	Room	Samda Hall	
	Chair(s)	Byungjoo Lee (Pusan National University Hospital, Republic of Korea) Haesang Park (Hallym University, College of Medicine, Republic of Korea)	

S4-B-01	13:00-13:25 Keynote	Bio 3D printing for tissue engineering Chan Hum Park ^{*1} ¹ Hallym University, Nanobio Regenerative Medical Institute, Republic of Korea
S4-B-02	13:25-13:40	Transnasal injection of mesenchymal stem cells with silk fibroin hydrogel for the treatment of traumatic brain injury Kyu Young Choi ¹ , Md. Tipu Sultan ¹ , Ok Joo Lee ¹ , Chan Hum Park ^{*1} ¹ Hallym University, Republic of Korea
S4-B-03	13:40-13:55	Treating sensorineural hearing loss using PRP(platelet-rich plasma) Minbo Shim ^{*1} , Minbo Shim ¹ ¹ Cheong Min Clinic, Republic of Korea
S4-B-04	13:55-14:10	3D in vitro models of head & neck squamous cell carcinomas using patient-derived cells Claudio Ricci ^{*1} , Franchi Alessandro ⁴ , Mario Hermsen ³ , Berrettini Stefano ² , Serena Danti ¹ ¹ University of Pisa, Dept. of Civil and Industrial Engineering, ² University of Pisa, Dept. of Surgical, Medical, Molecular and Critical Area Pathology, ³ Instituto de Investigaci00f3n Sanitaria del Principado de Asturias, Dept. of Head and Neck Oncology, ⁴ University of Pisa, Dept. of Translational Research & New technologies in Medicine & Surgery, Italy
S4-B-05	14:10-14:25	Taste regeneration by photobiomodulation of hedgehog signaling pathway Celine Abueva ¹ , Ha Young Lee ³ , So Young Park ¹ , Andrew Padalhin ¹ , Phil-Sang Chung ² , Hyun Seok Ryu ³ , Seung Hoon Woo ^{*2} ¹ Dankook Institute of Medicine and Optics, Dankook University, Cheonan, ² Department of Otorhinolaryngology, Head and Neck Surgery, Dankook University Hospital, Cheonan, ³ Interdisciplinary Program for Medical Laser, Dankook University College of Medicine, Cheonan Republic of Korea

S4-C	Session Topic	Bone and dental biology	
	Title	Regenerative dentistry	
	Date	October 6 (Thu)	Time 13:00-14:30
	Room	Room 301	
	Chair(s)	Joo-Cheol Park (Seoul National University, Republic of Korea) June-Ho Byun (Gyeongsang National University, Republic of Korea)	

S4-C-01	13:00-13:25 Keynote	Odontoblast-like cell differentiation process after exogenous tooth injuries and prospects for regeneration medicine in dentistry Hayato Ohshima ^{*1} ¹ Niigata University, Japan
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S4-C-02	13:25-13:40	Vitronectin-derived peptide promotes reparative dentin formation Sun-Young Kim^{*1} , choyeon park ¹ , Byung-Moo Min ¹ , Minju Song ² , Eunhye Lee ¹ ¹ Seoul National University, ² Dankook University, Republic of Korea
S4-C-03	13:40-13:55	Targeting class A GPCRs for pulp-dentin complex regeneration Jin Man Kim^{*1} ¹ Seoul National University, Republic of Korea
S4-C-04	13:55-14:10	Bone reconstruction using two-layer porcine-derived bone scaffold composed of cortical and cancellous bones Jung-Bo Huh^{*1} , Su-Hyun Hwang ¹ ¹ Department of Prosthodontics, School of Dentistry, Pusan national university, Korea, Republic of Korea
S4-C-05	14:10-14:25	3D platform to control orientations of periodontal ligament in periodontal defects in canine model: Pilot study Chan Ho Park^{*1} ¹ Kyungpook National University, Republic of Korea

S4-D	Session Topic	Immune Engineering
	Title	Biomaterials for Immune modulation
	Date	October 6 (Thu) Time 13:00-14:30
	Room	Room 302
	Chair(s)	Kyobum Kim (Dongguk University, Republic of Korea)

S4-D-01	13:00-13:25 Keynote	Exosomes as emerging nanomedicines for immune modulation: regulation of their in vivo fates for therapeutic applications Jae Hyung Park^{*1} ¹ Sungkyunkwan University, Republic of Korea
S4-D-02	13:25-13:40	High-throughput platform for 3D in vitro tumor vasculature model to monitor real-time Immune cell cytotoxicity Jiyoung Song² , Hyeri Choi ¹ , Seung Kwon Koh ³ , Dohyun Park ¹ , Duck Cho ⁴ , Hongnam Kim ² , Nooli Jeon ^{*1} ¹ Seoul National University, ² KIST, Republic of Korea, ³ Sungkyunkwan University, ⁴ Samsung Medical Center, Republic of Korea
S4-D-03	13:40-13:55	Biomimetic platform for the study of T cell mechanosensitivity and exhaustion Aseel Alatoom^{*1} , Jiranuwat Sapudom ¹ , Priya Soni ² , Walaa Mohamed ¹ , Anna Garcia-Sabate ¹ , Jeremy Teo ¹ ¹ New York University Abu Dhabi, ² New York University, United Arab Emirates
S4-D-04	13:55-14:10	Ex vivo natural killer cell surface engineering via lipid-based multifunctional biomaterials for enhanced triple negative breast cancer therapy Sungjun Kim¹ , Kyobum Kim ^{*1} ¹ Department of Chemical & Biochemical Engineering, Dongguk University, Republic of Korea

S4-E	Session Topic	Biofabrication
	Title	In vitro models: Processing techniques and applications
	Date	October 6 (Thu) Time 13:00-14:30
	Room	Room 303
	Chair(s)	J. Miguel Oliveira (University of Minho/3B's Research Group, Portugal) Rui L. Reis (University of Minho/3B's Research Group, Portugal)

S4-E-01	13:00-13:25 Keynote	In vitro 3D tumour models: (R)evolution of the processing methods and biomedical applications Rui L. Reis¹ , Rui Luís Reis ^{*1} ¹ University of Minho/3B's Research Group, Portugal
S4-E-02	13:25-13:40	In vitro models: a new era in pre-clinical research J. Miguel Oliveira^{*1} ¹ University of Minho/3B's Research Group, Portugal
S4-E-03	13:40-13:55	Biomaterials as an ECM for in vitro models Mitchell St Clair-Glover¹ , Amy Hulme ¹ , Sara Miellet ¹ , Rocio Finol-Urdaneta ¹ , Arsalan Yousof ¹ , David Adams ¹ , Zhilian Yue ¹ , Gordon Wallace ¹ , Mirella Dottori ¹ , Mirella Dottori ^{*1} ¹ University of Wollongong, Australia
S4-E-04	13:55-14:10	Microengineered systems to recapitulate the functional inner ear organoids with enhanced maturity Sunho Park¹ , Yeon Ju Kim ³ , Yonghyun Gwon ¹ , Woochan Kim ¹ , Hyosung Kim ¹ , Jun Seo Jung ² , Sung Hwan Cho ² , Kyeong Jin Park ² , Ahla Lee ² , Hyunsook Kang ² , Yun-Hoon Choung ³ , Jangho Kim ^{*1} ¹ Chonnam National University, ² Soonchunhyang University College of Medicine, ³ Ajou University, Republic of Korea
S4-E-05	14:10-14:25	Human pluripotent stem cells differentiation into retinal pigmented epithelial cells on different ECM-coated surface Hui-Yu Lin^{*1} , Akon Higuchi ¹ ¹ National Central University, Chinese Taipei

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Symposia 5

October 6 (Thu) 14:30-16:00

Session code	Topic	Room #
S5-A	Tissue Engineering	Halla Hall
S5-B	Biomaterials	Samda Hall
S5-C	Neurobiology	Room 301
S5-D	Manufacturing & Bioprocess	Room 302
S5-E	Biofabrication	Room 303

S5-A	Session Topic	Tissue Engineering
	Title	Acoustic bioassembly strategies for tissue engineering
	Date	October 6 (Thu) Time 14:30-16:00
	Room	Halla Hall
	Chair(s)	Tiziano Serra (AO Research Institute Davos, Switzerland) Mauro Alini (AO Research Institute Davos, Switzerland)
S5-A-01 CANCELLED	14:30-14:55 Keynote	Acoustic fabrication of living toroids and cardiomyocyte-based hybrid biorobots Utkan Demirci ¹ ¹ Stanford University, USA
S5-A-02	14:55-15:10	Sound programmable vasculature morphogenesis Tiziano Serra ^{*1} , Mauro Alini ¹ , Nicola Di Marzio ¹ ¹ AO Research Institute Davos, Switzerland
S5-A-03	15:10-15:25	Acoustic bioassembly for constructing in vitro histotypic and organotypic models Pu Chen ^{*1} , Longjun Gu ¹ , Jibo Wang ¹ ¹ Wuhan University, China
S5-A-04	15:25-15:40	Stabilized cardiac differentiation by improving the homogeneity of epithelial-mesenchymal transition in cell aggregates Yisheng Cui ¹ , Mee-Hae Kim ¹ , Masahiro Kino-oka ^{*1} ¹ Department of Biotechnology, Graduate school of Engineering, Osaka University, ² Department of Biotechnology, Research Base for Cell Manufacturability, Graduate School of Engineering, Osaka University, Japan
S5-A-05	15:40-15:55	Engineering human cardiac patch from human induced pluripotent stem cells derived from expanded CD34+ cells in mesenchymal stem cell coculture Fatin Fazrina Roslan ² , Yuexin Yu ⁵ , Meng Meng Wang ⁶ , Ghee Chien Ooi ¹ , Khong Lek Then ¹ , Kong Yong Then ¹ , Soon-Keng Cheong ⁴ , Mohd Nor Azim Ab Patar ³ , Jun Jie Tan ^{*2} ¹ Cryocord Sdn Bhd, Bio-X Centre, Persiaran Cyber Point Selatan, Cyberjaya, 63000 Cyberjaya, Selangor, Malaysia, ² Advanced Medical and Dental Institute, University of Science Malaysia, ³ Department of Neurosciences, Universiti Sains Malaysia 16150 Kubang Kerian, Kelantan, Malaysia, ⁴ Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman (UTAR), 43000 Kajang, Selangor, Malaysia, ⁵ Henan Key Laboratory of Medical Tissue Regeneration, Xinxiang Medical University, Henan, China, ⁶ Department of Neurobiology and Physiology, Xinxiang Medical University, Xinxiang 453003, Henan, China
S5-B	Session Topic	Biomaterials
	Title	Biomaterials for cardiovascular system
	Date	October 6 (Thu) Time 14:30-16:00
	Chair(s)	Jennifer Young (National University of Singapore, Singapore) Youngmee Jung (KIST, Republic of Korea)
	S5-B-01	14:30-14:55 Keynote
S5-B-02	14:55-15:10	Tissue-engineered vascular microphysiological platform to study immune modulation of xenograft rejection Youngmee Jung ^{*1} ¹ Korea Institute of Science and Technology, Republic of Korea
S5-B-03	15:10-15:25	Extracellular matrix properties regulate age-related cardiac function Jennifer Young ^{*1} ¹ National University of Singapore, Singapore
S5-B-04	15:25-15:40	Sourcing of blood-derived angiogenic cells (BDACs) under serum-free and xeno-free conditions for the treatment of critical limb ischemia Christy Wing Tung Wong ^{*1} , Anna Block ² ¹ Institute for Tissue Engineering and Regenerative Medicine, School of Biomedical Sciences, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China, ² Institute for Tissue Engineering and Regenerative Medicine, School of Biomedical Sciences, and Department of Orthopaedics & Traumatology, Faculty of Medicine, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China, Hong Kong
S5-B-05	15:40-15:55	The green lane graft: A novel decellularised scaffold for heart valve tissue engineering Steve Waqanivalagi ^{*1} , Marcus Ground ³ , Paget Milsom ² , Jill Cornish ¹ ¹ University of Auckland, ² Auckland District Health Board, ³ University of Otago, New Zealand

S5-C

Session Topic	Neurobiology	
Title	Neurosurgery session 1	
Date	October 6 (Thu)	Time 14:30-16:00
Room	Room 301	
Chair(s)	Inbo Han (CHA University School of Medicine, CHA Bundang Medical Center, Republic of Korea) Young Seok Park (Chungbuk univ, Republic of Korea)	

S5-C-01	14:30-14:55 Keynote	Advanced stem cell therapies for CNS repair using bioinspired nanotechnology Kibum Lee* ¹ ¹ Rutgers University, USA
S5-C-02	14:55-15:10	Liquid biopsy for spinal cord injury biomarker: miRNA biopsy Jeong-Yoon Park* ¹ , Mirae Lee ³ , Jiwon Woo ² ¹ Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea, ² The Spine and Spinal Cord Institute, Department of Neurosurgery, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Republic of Korea, ³ Department of Neurosurgery, Graduate School of Medical Science, Brain Korea 21 Project, Yonsei University College of Medicine, Seoul, Republic of Korea
S5-C-03	15:10-15:25	Effect of electrical stimulation on spinal cord injury: In vitro and in vivo analysis Kyoung-Tae Kim* ¹ ¹ Kyungpook National University, Republic of Korea
S5-C-04	15:25-15:40	Lubricant skin on diverse biomaterials with complex shapes via polydopamine-mediated surface functionalization for biomedical application Kijun Park* ¹ , Yejin Jo ¹ , Jae Park ¹ , Jungmok Seo* ¹ ¹ Yonsei University, Republic of Korea
S5-C-05	15:40-15:55	Development of a three-dimensional blood-brain barrier network with opening capillary structures for drug transport screening assays Marie Piantino* ¹ , Michiya MATSUSAKI* ¹ ¹ Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Japan

S5-D

Session Topic	Tissue Engineering	
Title	Recent technologies for cell manufacturing	
Date	October 6 (Thu)	Time 14:30-16:00
Room	Room 302	
Chair(s)	Masahiro Kino-oka (Department of Biotechnology, Osaka University, Japan) Tatsuya Shimizu (Tokyo Women's Medical University, Japan)	

S5-D-01	14:30-14:55 Keynote	Diversity in tissues engineering ---from regenerative therapy to sustainable food production--- Tatsuya Shimizu* ¹ ¹ Tokyo Women's Medical University, Japan
S5-D-02	14:55-15:10	Recent technology for large-scale cell manufacturing Masahiro Kino-oka* ¹ , Mee-Hae Kim ² , Riku Yamamoto ² , Manabu Mizutani ³ ¹ Department of Biotechnology, Osaka University; Research Base for Cell Manufacturability, Osaka University, ² Department of Biotechnology, Osaka University, ³ Research Base for Cell Manufacturability, Osaka University, Japan
S5-D-03	15:10-15:25	Development of support-free bioceramic 3D printing technique Yeong-Jin Choi* ¹ , Raja Naren ¹ , Hui-suk Yun* ¹ ¹ Korea Institute of Materials Science, Republic of Korea
S5-D-04	15:25-15:40	Innovative advancement of random positioning machines for tissue engineering applications Jeremy Teo* ¹ , Mei ElGindi ¹ , Jiranuwat Sapudom ¹ , Anna Garcia Sabat ¹ , Ibrahim Ibrahim ¹ ¹ New York University Abu Dhabi, United Arab Emirates
S5-D-05	15:40-15:55	Label-free and high-throughput removal of residual undifferentiated iPSCs from their differentiated progenitor cells by inertial microfluidic cell sorter Tan Dai Nguyen* ³ , Wai Hon Chooi ² , Jiahui Chen ¹ , Daniel Ninio Roxby ¹ , Jerome Tan Zu Yao ¹ , Hyungkook Jeon ⁵ , Shi Yan Ng ² , Sing Yian Chew ⁵ , Jongyoon Han* ⁴ ¹ School of Chemical and Biomedical Engineering, Nanyang Technological University (Singapore), ² Institute of Molecular and Cell Biology, A*STAR Research Entities (Singapore), ³ Critical Analytics for Manufacturing of Personalized Medicine, Singapore-MIT Alliance for Research and Technology (Singapore), ⁴ Department of Electrical Engineering and Computer Science, Biological Engineering, Massachusetts Institute of Technology (USA); Critical Analytics for Manufacturing of Personalized Medicine, Singapore-MIT Alliance for Research and Technology (Singapore), ⁵ Department of Electrical Engineering and Computer Science, Biological Engineering, Massachusetts Institute of Technology (USA), ⁶ School of Chemical and Biomedical Engineering, Nanyang Technological University (Singapore); Lee Kong Chian School of Medicine, Nanyang Technological University (Singapore); School of Materials Science and Engineering, Nanyang Technological University (Singapore)

S5-E

Session Topic Biofabrication

Title 3D bioprinting of vascularised organs and tissues

Date October 6 (Thu) Time 14:30-16:10

Room Room 303

Chair(s) Jiao Jiao Li (University of Technology Sydney, Australia)
Jinah Jang (Pohang University of Science and Technology, Republic of Korea)

S5-E-01	14:30-14:55 Keynote	3D bioprinted cardiac tissues for heart repair Carmine Gentile* ¹ , Christopher Roche ² , Dominik Beck ¹ , Meilang Xue ² ¹ University of Technology Sydney, ² The University of Sydney, Australia
S5-E-02	14:55-15:10	Engineering skeletal muscle and neural tissues Anita Quigley* ¹ , Catherine Ngan ⁴ , Kate Firipis ¹ , Magdalina Kita ¹ , Cathal O'Connell ¹ , Elena Pirogova ¹ , David Nisbet ³ , Richard Williams ² , Robert Kapsa ¹ ¹ Biomedical and Electrical Engineering, School of Engineering, RMIT University, Melbourne, VIC 3001, ² School of Medicine, Deakin University, Waurn Ponds, VIC 3216, ³ Graeme Clark Institute for Biomedical Engineering, University of Melbourne, Parkville, VIC 3052, ⁴ Department of Surgery, The University of Melbourne, St Vincent's Hospital, Melbourne, VIC 3010, Australia
S5-E-03	15:10-15:25	Biofabrication within cell-laden gradient microgel suspensions for spatial control of differentiation Kris Kilian* ¹ , Thomas Molley ¹ ¹ UNSW Sydney, Australia
S5-E-04	15:25-15:40	Bioprinting of grafts with micro-vascular patterns for rapid vascularization and therapeutics of ischemic disease Jeonghyun Son ¹ , Won Ha ¹ , Hyun-Wook Kang* ¹ ¹ UNIST, Republic of Korea
S5-E-05	15:40-15:55	Recent advances in bioengineering for the fabrication and study of thick living tissues Shabir Hassan ² , Eduardo Gomez Reyes ¹ , Su Ryon Shin* ¹ ¹ Harvard Medical School, ² Khalifa University, United Arab Emirates
S5-E-06	15:55-16:10	Functionalized PLLA membrane and tubular scaffold for vascular grafts: Combining electrospinning and 3D bioprinting techniqueper Ana Luiza Millás* ² , Karen Elizabeth Galvão ¹ , Geovany Candido ¹ , Marcelo Napimoga ³ , Hector Barone ⁴ , Pedro X.R. Massaguer ¹ ¹ Startup 3D Biotechnology Solutions, ² Startup 3D Biotechnology Solutions - 3DBS, ³ Sao Leopoldo Mandic Faculty/Campinas, ⁴ BARONE COMPANY, Brazil

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

Symposia 6

October 6 (Thu) 16:30-18:00

Session code	Topic	Room #
S6-A	Tissue Engineering	Halla Hall
S6-B	Biomaterials	Samda Hall
S6-C	Neurobiology	Room301
S6-D	Manufacturing & Bioprocess	Room 302
S6-E	Biofabrication	Room 303

S6-A	Session Topic	Tissue Engineering
	Title	Bio-inspired approaches in 3D tissue reconstruction
	Date	October 6 (Thu) Time 16:30-18:00
	Room	Halla Hall
	Chair(s)	Manuela Gomes (3B's Research Group - I3Bs - Research Institute of University of Minho, Portugal) Kyung Min Park (Incheon National University, Republic of Korea)

S6-A-01	16:30-16:55 Keynote	Effects of hydrogel charge and LCST on tissue integration for cartilage tissue engineering Antonios Mikos*¹, Hannah Pearce¹ ¹ Rice University, USA
S6-A-02	16:55-17:10	Engineering multi-cellular spheroid using bioinspired materials for tissue engineering Heungsoo Shin*¹ ¹ Hanyang University, Republic of Korea
S6-A-03	17:10-17:25	Extrusion base 3D printing fidelity refinement of Kagome structure scaffolds for bone regeneration by design for additive manufacturing Min-Soo Ghim¹, Hyung-Woo Kim¹, Young-Sam Cho*¹ ¹ Wonkwang University, Republic of Korea
S6-A-04	17:25-17:40	Developing next generation adipose tissue grafts for soft tissue reconstruction Gretel Major*¹, Alessia Longoni¹, Jeremy Simcock¹, Khoon Lim¹, Tim Woodfield¹ ¹ University of Otago, New Zealand
S6-A-05	17:40-17:55	Functional chitosan hydrogels for intra-urethral stents: processing, in vitro and in vivo evaluations Paula Nunes de Oliveira*⁵, Elizangela Hafemann¹, Guillaume Sudre¹, Alexandra Montebault¹, Francoi Lux³, Olivier Tillement³, Catherine Bonnefont-Rebeix², Samuel Buff², Corina Udrescu⁴, Olivier Chapet⁴, Claude Carozzo², Laurent David¹ ¹ Laboratoire Ingénierie des Matériaux Polymères, Université Claude Bernard Lyon 1, INSA de Lyon, Université Jean Monet, CNRS UMR 5223, Univ Lyon, 15 bd A. Latarjet, 69622 Villeurbanne Cedex France, ² Interaction Cellule-Environnement, Vetagro Sup, Univ Lyon, 1 avenue Bourgelat, 69280 Marcy-l'Etoile France, ³ Institut Lumière Matière, Université Claude Bernard Lyon 1, CNRS, UMR 5306, Univ Lyon, 2 rue Victor Grignard, 69100 Villeurbanne Cedex France/Nano-h, 2 Pl. de l'Europe, 38070 Saint-Quentin-Fallavier, ⁴ Département de radioterapie oncologie, centre hospitalier et universitaire Lyon Sud, Univ Lyon, 165, chemin du Grand-Revoynet, 69495 Pierre-Benite, France, ⁵ CNRS@CREATE Ltd, CREATE Tower, #08-01, 1 Create way, Singapore 138602/Laboratoire Ingénierie des Matériaux Polymères, Université Claude Bernard Lyon 1, INSA de Lyon, Université Jean Monet, CNRS UMR 5223, Univ Lyon, 15 bd A. Latarjet, 69622 Villeurbanne Cedex France, ⁶ CNRS@CREATE Ltd, CREATE Tower, #08-01, 1 Create way, Singapore 138602 / Laboratoire Ingénierie des Matériaux Polymères, Université Claude Bernard Lyon 1, INSA de Lyon, Université Jean Monet, CNRS UMR 5223, Univ Lyon, 15 bd A. Latarjet, 69622 Villeurbanne Cedex France, Singapore

S6-B	Session Topic	Biomaterials
	Title	Nano-biomaterials for regeneration
	Date	October 6 (Thu) Time 16:30-18:00
	Room	Samda Hall
	Chair(s)	Chong-Su Cho (Seoul National University, Republic of Korea) Ji-Young Hwang (Korea Carbon Industry Promotion Agency, Republic of Korea)

S6-B-01	16:30-16:55 Keynote	A new way of producing natural antibacterial peptides from probiotics through intracellular stimulation by internalized polysaccharides nanoparticles as prebiotics Chong-Su Cho*¹, Cheol-Heui Yun¹, Sang-Kee Kang¹, Seo-Kyung Kim¹, Jeong-Chul Lee¹ ¹ Seoul National University, Republic of Korea
S6-B-02	16:55-17:10	Promoting neural regeneration on biomimic surface-modified scaffolds by functionalized carbon nanotubes Ji-Young Hwang*¹, Ueon Sang Shin², Hae-Won Kim² ¹ Korea Carbon Industry Promotion Agency, ² Dankook University, Republic of Korea
S6-B-03	17:10-17:25	Injectable nano-complex hydrogels for immune modulation-mediated tissue regeneration Young-Min Kim*¹ ¹ Korea Institute of Science and Technology, Republic of Korea
S6-B-04	17:25-17:40	Nucleic acids-functionalized nanomaterials for healthcare Hyojin Lee*¹ ¹ Korea Institute of Science and Technology
S6-B-05 CANCELLED	17:40-17:55	Antioxidant nanoceria-decorated scaffolds (nanofiber, porous, films) for diabetic bone regeneration via adhesion-mediated and TGF-β1 stimulated MSC differentiation and endothelial function Rajendra Kumar Singh*¹, Jung-Hwan Lee², Amal George Kurian³, Hae-Won Kim² ¹ Research Professor, ² Professor, Republic of Korea, ³ student, Republic of Korea

S6-C

Session Topic	Neurobiology		
Title	Neurosurgery session 2		
Date	October 6 (Thu)	Time	16:30-18:00
Room	Room 301		
Chair(s)	KiBum Lee (Rutgers University, USA) Jeong-Yoon Park (Gangnam Severance Hospital, Yonsei University College of Medicine, Republic of Korea)		

S6-C-01	16:30-16:55 Keynote	Strategies for regeneration and repair in the injured spinal cord Inbo Han* ¹ , Eun Ji Roh ^{1,2} , Da-Seul Kim ^{2,3} , Jun Hyuk Kim ² , Su Yeon Kwon ¹ , So-Yeon Park ^{2,4} , Jun Yong Kim ² , Dong Keun Han ² ¹ Department of Neurosurgery, CHA University School of Medicine, CHA Bundang Medical Center, Seongnam, ² Department of Biomedical Science, College of Life Sciences, CHA University, Seongnam, ³ School of Integrative Engineering, Chung-Ang University, Seoul, ⁴ Division of Biotechnology, College of Life Sciences and Biotechnology, Korea University, Seoul, Republic of Korea
S6-C-02	16:55-17:10	Transplantation of human embryonic stem cells alleviates motor dysfunction in AAV2-Htt171-82Q transfected rat model of Huntington's disease Young Seok Park* ¹ , Jaisan Islam ⁵ , Elina KC ⁴ , Tae hyun Kang ³ , Yoon Youn Park ² ¹ Chungbuk univ, ² Chungbuk national univ, ³ Chungbuk national univ hospital, ⁴ Chungbuk nationl univ, ⁵ Chungbuk National University, Republic of Korea
S6-C-03	17:10-17:25	A calibrated forceps compression mechanical in vivo spinal cord injury model and behavioral assessment post injury Anam Anjum* ¹ , Muhammad Dain Yazid ¹ , Muhammad Fauzi Daud ³ , Jalilah Idris ³ , Angela Min Hwei Ng ¹ , Amaramalar Selvi Naicker ² , Ohnmar Htwe Ismail ² , Ramesh Kumar Athi Kumar ⁴ , Yogeswaran Lokanathan ¹ ¹ Center of Tissue Engineering and Regenerative medicine, Faculty of Medicine, University Kebangsaan Malaysia, Jalan Yaacob Latif, 56000 Cheras, Kuala Lumpur, ² Department of Orthopaedics & Traumatology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, ³ Institutes of Medical Science Technology, Universiti Kuala Lumpur, Kajang, ⁴ Department of Surgery, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latiff, Bandar Tun Razak, Kuala Lumpur, Malaysia
S6-C-04	17:25-17:40	Heparin-conjugated growth factors-immobilized aligned electrospun nanofibers for nerve regeneration in tubular polycaprolactone/gelatin based nerve guidance conduits Muhammad Shafiq* ¹ , Yasuhiro Ikegami ¹ , Hiroyuki Ijima ¹ ¹ Department of Chemical Engineering, Faculty of Engineering, Graduate School, Kyushu University, 744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan
S6-C-05	17:40-17:55	Therapeutic potential of neural stem cells preconditioned with baicalein-enriched fraction (BEF) for ischemic stroke rat models Suat Cheng Tan* ¹ , Nik Nur Hakimah Nik Salleh ¹ , Farah Amna Othman ¹ ¹ School of Health Sciences, Health Campus, Universiti Sains Malaysia, Kelantan, Malaysia

S6-D

Session Topic	Manufacturing & Bioprocess		
Title	Manufacturing technologies for cell/tissue sources		
Date	October 6 (Thu)	Time	16:30-18:00
Room	Room 302		
Chair(s)	Tae-Hyung Kim (Chung-Ang University, Republic of Korea) Yoh-ichi Tagawa (Tokyo Institute of Technology, Japan)		

S6-D-01	16:30-16:55 Keynote	Tri-culture of intestinal epithelial cells, macrophage, and bacteria on a chip for culture model of inflammatory bowel disease Yoh-ichi Tagawa* ¹ , Minami Tsuda ¹ , Clarissa Pasang ¹ , Yoichi Fujiyama ² ¹ Tokyo Institute of Technology, ² Shimadzu Corporation, Japan
S6-D-02	16:55-17:10	Engineering large and thick vascularized tissue constructs and its application in tissue engineering Ying-Chieh Chen* ¹ , Ting-Lun Hsu ¹ ¹ National Tsing-Hua University, Chinese Taipei
S6-D-03	17:10-17:25	Label-free assessment of differentiation efficiency in induced pluripotent stem cell derived spinal cord progenitor cells via magnetic resonance relaxometry (MRR) Jerome Tan Zu Yao* ¹ , Jiahui Chen ² , Wai Hon Chooi ⁵ , Daniel Roxby ⁴ , Tan Dai Nguyen ³ , Jongyoon Han ³ , Sing Yian Chew ² ¹ School of Chemical and Biomedical Engineering, Nanyang Technological University, Interdisciplinary Graduate Programme, ² School of Chemical and Biomedical Engineering, Nanyang Technological University, ³ Critical Analytics for Manufacturing of Personalized Medicine, Singapore-MIT Alliance for Research and Technology, ⁴ School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, ⁵ Institute of Molecular and Cell Biology, A*STAR Research Entities, Singapore
S6-D-04	17:25-17:40	Development of an in vitro microvasculature model for non-penetrating trauma research Carla Veronica Fuenteslopez* ¹ , Hua Ye ² , Mark Thompson ² ¹ Institute of Biomedical Engineering, University of Oxford, ² Department of Engineering Science, University of Oxford, United Kingdom
S6-D-05	17:40-17:55	Interfacial cell migration-based tattoo sticker-like cell delivery platform Yejin Youm* ¹ , Ju An Park ² , Sungjune Jung ¹ ¹ Univ. postech, ² University of Cambridge, Republic of Korea

S6-E

Session Topic Biofabrication

Title New frontiers in advanced bioinks and biofabrication of functional tissues and organs

Date October 6 (Thu) Time 16:30-18:00

Room Room 303

Chair(s) Jinah Jang (Pohang University of Science and Technology, Republic of Korea)
Khoon Lim (Department of Orthopaedic Surgery and Musculoskeletal Medicine, University of Otago, New Zealand)

S6-E-01	16:30-16:55 Keynote	Micropore-forming gelma bioinks for tissue bioprinting Y. Shrike Zhang^{*1} ¹ Harvard Medical School, USA
S6-E-01	16:55-17:10	Biofabrication approaches enabled by covalent crosslinking of silk Jelena Rnjak-Kovacina^{*1} , Hien Tran ¹ , Fatemeh Karimi ¹ , Habib Joukhdar ¹ , Xiaolin Cui ² , Khoon Lim ² ¹ University of New South Wales, ² University of Otago Christchurch, Australia
S6-E-03	17:10-17:25	Advanced pathophysiological in vitro 3D models of the human heart using cardiac spheroids Carminé Gentile^{*1} , Poonam Sharma ² , Clara Liu Chung Ming ¹ , Dominik Beck ¹ , Gemma Figtree ³ , Andrew Boyle ² ¹ University of Technology Sydney, ² University of Newcastle, ³ University of Sydney, Australia
S6-E-04	17:25-17:40	3D bioprinting strategies for in vitro modeling of diseased skin Byoung Soo Kim^{*1} ¹ Pusan National University, Republic of Korea
S6-E-05	17:40-17:55	3D printed PEEK/silicon nitride scaffolds with triply periodic minimal surface structure for spinal implants Xiaoyu Du^{*1} , Sean Ronayne ² , Seunghun Lee ¹ , Jackson Hendry ² , Doug Hoxworth ² , Ryan Bock ² , Stephen Ferguson ¹ ¹ ETH Zurich, ² SINTX Technologies, Inc., Switzerland

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

Symposia 7

October 7 (Fri) 10:30-12:00

Session code	Topic	Room #
S7-A	2022 TERMIS-AP Awards	Halla Hall
S7-B	Biomaterials	Samda Hall
S7-C	Musculoskeletal	Room 301
S7-D	KWSE Session	Room 302
S7-E	Biofabrication	Room 303
S7-F	Enabling Technology	Room 401

S7-A	Session Topic	Awards Session	
	Title	A_2022 TERMIS-AP Awards session	
	Date	October 7 (Fri)	Time 10:30-12:00
	Room	Halla Hall	
	Chair(s)	Akon Higuchi (National Central University, Chinese Taipei) Guoping Chen (National Institute for Materials Science, Japan)	

S7-A-01	10:30-11:10 Awardee	Excellence Achievement Award Yasuhiko Tabata¹ ¹ Laboratory of Biomaterials, Institute for Life and Medical Sciences, Kyoto University, Japan
S7-A-02	11:10-11:40 Awardee	Outstanding Scientist Award Yin Xiao¹ ¹ School of Medicine and Dentistry, Griffith University, Australia
S7-A-03	11:40-11:50 Awardee	Young Investigator Award 1 Khoon Lim¹ ¹ Department of Orthopaedic Surgery and Musculoskeletal Medicine, University of Otago, New Zealand
S7-A-04	11:50-12:00 Awardee	Young Investigator Award 2 Jiao Jiao Li¹ ¹ University of Technology Sydney, Australia

S7-B	Session Topic	Biomaterials	
	Title	Polymeric biomaterials for tissue engineering	
	Date	October 7 (Fri)	Time 10:30-12:00
	Room	Samda Hall	
	Chair(s)	Yoon Ki Joung (KIST, Republic of Korea) Nur Aliana Hidayah Mohamed (Universiti Teknologi MARA, Malaysia)	

S7-B-01	10:30-10:55 Keynote	Evaluation of poly vinyl alcohol based membranes as shape memory polymers Jen Ming Yang*¹ ¹ Chang Gung University, Chinese Taipei
S7-B-02	10:55-11:10	Fabrication of MOF gel-immobilized polymer substrates as a cell scaffold for mammary grant epithelial cells Masaya Yamamoto*¹, Masaya Tanaka¹ ¹ Tohoku University, Japan
S7-B-03	11:10-11:25	Adhesive nanofibrous membrane for photobiomodulated wound healing Ki Su Kim*¹ ¹ Pusan National University, Republic of Korea
S7-B-04	11:25-11:40	Evaluation of poly(3-hydroxybutyrate-co-4-hydroxybutyrate) [p(3hb-co-4hb)] based biocomposite for translational biomedical applications Nik Aliaa*¹, Lady Barrios Silva¹, Aiman Hakimi Abd Rahim², Sean Nair¹, Michael Sulu¹, Amirul Abdullah², Siti Noor Fazliah Mohd Noor², Hae-Won Kim³, Linh Nguyen¹, David Chau¹ ¹ University College London, ² Universiti Sains Malaysia, ³ Dankook University, United Kingdom
S7-B-05	11:40-11:55	Mussel-inspired mechano-activatable adhesive microcapsules as a strain-regulated on-demand therapeutics delivery system Yun Kee Jo*¹ ¹ Kyungpook National University, Republic of Korea

S7-C	Session Topic	Musculoskeletal	
	Title	Musculoskeletal tissue regeneration disease models	
	Date	October 7 (Fri)	Time 10:30-12:00
	Room	Room 301	
	Chair(s)	Hyuk-Soo Han (Seoul National University Hospital, Republic of Korea) Martin Stoddart (AO Research Institute Davos, Switzerland)	

S7-C-01	10:30-10:50 Keynote	Sound induced morphogenesis: A new contactless bioprinting's technology for tissue regeneration Mauro Alini*¹ ¹ AO Research Institute, Switzerland
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S7-C-02	10:50-11:00	Effect of polydeoxyribonucleotide and polynucleotide on rotator cuff healing and fatty degeneration Jung-Taek Hwang* ¹ ¹ Chuncheon Sacred Heart Hospital, Hallym University Medical College, Republic of Korea
S7-C-03	11:00-11:10	Novel bottom-up tissue engineering strategy enabled by 3D-printed microscaffolds Aleksandr Ovsianikov* ¹ ¹ TU Wien, Austria
S7-C-04	11:10-11:20	Bone matrix derived bone-tendon enthesis for repair of irreparable rotator cuff tears Chaozong Liu* ¹ , Jeremy Mortimer ¹ , Maryam Tamaddon ¹ ¹ University College London, United Kingdom
S7-C-05	11:20-11:30	Neuropeptide calcitonin gene-related peptide engineered to bind the extracellular matrix restores diabetic wound healing via immunoregulation Yen-Zhen Lu* ¹ , Shailendra Kumar Singh ² , Elle Yuan ¹ , Kenta Maruyama Maruyama ² , Shizuo Akira ² , Mikael Martino* ¹ ¹ European Molecular Biology Laboratory Australia, Australian Regenerative Medicine Institute, Monash University, Australia, ² Laboratory of Host Defense, World Premier Institute Immunology Frontier Research Center, Osaka University, Osaka, Japan
S7-C-06	11:30-11:40	Dysregulated energy production during scaffold-guided bone regeneration In type 2 diabetes Patrina S.P. Poh* ¹ , Daniela Dias ¹ , Raphaela Fritsche-Guenther ² , Georg N. Duda ¹ , Jennifer Kirwan ² ¹ Berlin Institute of Health at Charite-universitatmedizin Berlin, Germany, ² Berlin Institute of Health - Metabolomics Platform, Berlin, Germany

S7-D

Session Topic	KWSE Session		
Title	KWSE session		
Date	October 7 (Fri)	Time	10:30-12:30
Room	Room 302		
Chair(s)	Jeong Ok Lim (Kyungpook National University, Republic of Korea) Ji-Young Hwang (Korea Carbon Industry Promotion Agency (KCARBON), Republic of Korea)		

S7-D-01	10:30-11:15 Keynote	New strategies and animal models for craniomaxillofacial tissue regeneration Pamela C Yelick* ¹ , Sang Jin Lee ² , Simon Young ³ , Weibo Zhang ¹ ¹ Tufts University School of Dental Medicine, Boston MA, ² Wake Forest Institute for Regenerative Medicine, Winston-Salem, North Carolina, ³ University of Texas Health Science Center at Houston, Houston TX, USA
S7-D-02	11:15-11:30	Stem cell factor & cKIT as novel therapeutic targets for vascular eye diseases Wonhee Suh* ¹ , Hayoung Jeong ² ¹ Chung-Ang University, ² Chung-Ang University, College of Pharmacy, Republic of Korea
S7-D-03	11:30-11:45	Regeneration of airway mucosa: Scaffolds to epithelial cells Soo Yeon Jung* ¹ ¹ Ewha Womans University, College of Medicine, Republic of Korea
S7-D-04	11:45-12:00	Combination treatment of stem cells and cartilage acellular matrix injection for osteoarthritis Seunghee Lee* ¹ , Mijin Kim ¹ , Jongchan Ahn ¹ , Jusik Lee ¹ , Seongsoo Song ¹ , Kyung-Sun Kang ² ¹ Kangstem Biotech, ² Seoul National University, Republic of Korea

S7-E

Session Topic	Biofabrication		
Title	Multiscale printing for biomedical application		
Date	October 7 (Fri)	Time	10:30-12:00
Room	Room 303		
Chair(s)	Won-Gun Koh (Yonsei University, Republic of Korea) Jae Young Lee (Gwangju Institute of Science and Technology, Republic of Korea)		

S7-E-01	10:30-10:55 Keynote	Bioactive microcapsules for cultivation of stem cells Alexander Revzin* ¹ , Kihak Gwon ¹ , Gulnaz Stybayeva ¹ ¹ Mayo Clinic, USA
S7-E-02	10:55-11:10	Machine learning-based predictive model for printability and shape fidelity in biofabrication Vidal L.* ¹ , Hascoët N. ² , Kavrakova T. ¹ , Arduengo Garcia J. ¹ , Chinesta F. ² , Hascoët JY. ¹ ¹ Rapid Manufacturing Platform, GeM Laboratory, CNRS UMR 6183, Centrale Nantes, Nantes, ² PIMM Laboratory, CNRS UMR 8006, Arts et Metiers Institute of Technology, Paris, France
S7-E-03	11:10-11:25	A biphasic 3D osteo-vascular on a chip for recapitulating the bone marrow environment Hwan Kim* ¹ ¹ Korea National University of Transportation, Republic of Korea

S7-E-04	11:25-11:40	Toward an edible engineered meat-like tissue from assembled bovine cell fibers fabricated by tendon-gel integrated bioprinting Fiona Louis ^{*3} , Dong-Hee Kang ² , Shiro Kitano ¹ , Michiya Matsusaki ² ¹ Joint Research Laboratory (TOPPAN) for Advanced Cell Regulatory Chemistry, Graduate School of Engineering, Osaka University, ² Department of Applied Chemistry, Graduate School of Engineering, Osaka University, ³ Osaka University, Japan
S7-E-05	11:40-11:55	Nanomaterial-reinforced alginate bioinks for potential bone tissue engineering Jae Young Lee ^{*1} ¹ Gwangju Institute of Science and Technology, Republic of Korea
S7-F	Session Topic	Enabling Technology
	Title	Smart and targeted therapy
	Date	October 7 (Fri) Time 10:30-12:00
	Room	Room 401
	Chair(s)	Su-Geun Yang (Inha University, Republic of Korea) Sejin Son (Inha University, Republic of Korea)
S7-F-01	10:55 Keynote	Pathogen mimicking polysaccharide nanocapsule for cancer immunotherapy Sejin Son ^{*1} ¹ Inha University, Republic of Korea
S7-F-02	10:55-11:10	Controlled local photothermal therapy using nano-functionalized stent Jung-Hoon Park ^{*1} ¹ Asan Medical Center, Republic of Korea
S7-F-03	11:10-11:25	Biomimetic peptides for sustained drug release from silk fibroin hydrogel Peerapat Thongnuek ^{*1} , Kittikhun Wangkanont ³ ¹ Biomedical Engineering Program, Faculty of Engineering, Chulalongkorn University, ² Chulalongkorn University, ³ Department of Biochemistry, Faculty of Science, Chulalongkorn University, Thailand
S7-F-04	11:25-11:40	Three-dimensional microphysiological system-inspired scalable vascularized tissue constructs for regenerative medicine Seokyoung Bang ³ , Dongha Tahk ¹ , Young Hwan Choi ² , Somn Lee ¹ , Jungeun Lim ¹ , Seung-Ryeol Lee ¹ , Byung-Soo Kim ² , Nathaniel S. Hwang ² , Noo Li Jeon ¹ , Hong Nam Kim ^{*3} ¹ Department of Mechanical Engineering, Seoul National University, ² School of Chemical and Biological Engineering, Seoul National University, ³ KIST, Republic of Korea
S7-F-05 CANCELLED	11:40-11:55	Ion-assisted plasma polymerization: Surface engineering of biomimetic interfaces Behnam Akhavan ^{*1} ¹ University of Newcastle, Australia

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Symposia 8

October 7 (Fri) 13:00-14:30

Session code	Topic	Room #
S8-A	KFRM Joint Sesion	Halla Hall
S8-B	Biomaterials	Samda Hall
S8-C	Musculoskeletal	Room 301
S8-D	Biomaterials	Room 302
S8-E	Stem Cells	Room 303
S8-F	Enabling Technology	Room 401

S8-A

Session Topic	Joint Sesion
Title	KFRM joint session: Domestic and global interaction in cell therapy industry
Date	October 7 (Fri) Time 13:00-14:30
Room	Halla Hall
Chair(s)	Inho Jo (KFRM, Republic of Korea)

S8-A-01	13:00-13:20 Keynote	The importance of CMC in your R&D; How to integrate commercial thinking into your discovery J. Kelly Ganjei ¹ ¹ Amplifybio, USA
S8-A-02	13:20-13:34	Regain of the function by the cell therapy: New wave of regenerative medicine Jaeseung Lim ¹ ¹ Cellatoz Therapeutics, Inc., Republic of Korea
S8-A-03	13:34-13:48	AffyXell: New modality for restoring immune balance Sung Hyun Choi ¹ , Ki Nam Kim ¹ , Kyonghoon Ahn ³ , Hwa In Yoon ¹ , Song Hwa Kang ¹ , Jong Sang Ryu ² ¹ AFX R&D Center, AffyXell Therapeutics Co., Ltd., ² AffyXell Therapeutics Co., Ltd., ³ Strategy & Planning Team, AffyXell Therapeutics Co., Ltd. Republic of Korea
S8-A-04	13:48-14:02	Stem cell therapy for intractable neurological disorders Minhee Kim ¹ , Tae Yong Lee ¹ , Kyung-Suk Kim ¹ ¹ Central Research Center, Corestem Inc., Republic of Korea
S8-A-05	14:02-14:16	What and how much you need to disclose in your patent applications for your desired scope of protection Mincheol Kim ¹ ¹ K&L Gates, LLP, USA
S8-A-06	14:16-14:30	Korean fund for regenerative medicine (KFRM): Present and future Hanah Cho ¹ , Sangeun Yi ¹ , Min-Suk Jeong ¹ , Yoon-Hyuk Choe ¹ , Inho Jo ¹ ¹ Korean Fund for Regenerative Medicine, Republic of Korea

S8-B

Session Topic	Biomaterials
Title	Biomaterials for regenerative engineering
Date	October 7 (Fri) Time 13:00-14:30
Room	Samda Hall
Chair(s)	Andrew Holle (National University of Singapore, Singapore) Youngmee Jung (KIST, Republic of Korea)

S8-B-01	13:00-13:25 Keynote	Understanding the regenerative response induced by biomaterials systems: Insight into the role of glycosylation Abhay Pandit ¹ ¹ CURAM, University of Galway, Ireland
S8-B-02	13:25-13:40	Engineering musculoskeletal soft tissues: Material and mechanobiologic considerations Su-Jin Heo ¹ ¹ University of Pennsylvania, USA
S8-B-03	13:40-13:55	Confinement as a strategy for inducing stem cell differentiation Andrew Holle ¹ ¹ National University of Singapore, Singapore
S8-B-04	13:55-14:10	Directed assembly of keratin based scaffolds for tissue engineering Kee Woei Ng ^{1,2,3} ¹ School of Materials Science and Engineering, Nanyang Technological University, ² Environmental Chemistry and Materials Centre, Nanyang Environment and Water Research Institution, ³ Center for Nanotechnology and Nanotoxicology, Harvard T.H. Chan School of Public Health, Harvard University, United States, Singapore
S8-B-05	14:10-14:25	Harnessing the bio-responsive adhesion of immuno-bioGlue for cancer immunotherapy Kye Il Joo ¹ ¹ Ewha Womans University, Republic of Korea

S8-C

Session Topic	Musculoskeletal
Title	Cell therapy for cartilage repair and osteoarthritis (KORS joint session)
Date	October 7 (Fri) Time 13:00-14:30
Room	Room 301
Chair(s)	Hyuk-Soo Han (Seoul National University Hospital, Republic of Korea) Chul-Won Ha (Sungkyunkwan University, Republic of Korea)

S8-C-01	13:00-13:20 Keynote	Reproducing kinematic load in vitro for chondrogenesis studies Martin Stoddart* ¹ ¹ AO Research Institute Davos, Switzerland
S8-C-02	13:20-13:30	BMAC, ACI, cartilage for cartilage repair and osteoarthritis Min Jung* ¹ ¹ Yonsei University College of Medicine, Republic of Korea
S8-C-03	13:30-13:40	Allogeneic umbilical cord blood-derived mesenchymal stem cells implantation for large cartilage defects in older patients Yong-Beom Park* ¹ , Chul-Won Ha ² ¹ Chung-Ang University, ² Samsung medical center, Sungkyunkwan university, Republic of Korea
S8-C-04	13:40-13:50	The application of pulsed electro-magnetic field for cartilage regeneration Zheng Yang* ¹ , Doreen Goh ¹ , Dinah Kadir ¹ , Alfredo Franco-Obregon ¹ , James Hui ¹ , Eng Hin Lee ² ¹ National University of Singapore, ² National University Health System, Singapore
S8-C-05 CANCELLED	13:50-14:00	Preclinical evaluation of a novel osteochondral scaffold in sheep joint Maryam Tamaddon* ¹ , Gordon Blunn ² , Chaozong Liu ¹ ¹ University College London, ² University of Portsmouth, United Kingdom
S8-C-06	14:00-14:10	Microfracture with collagen scaffold for cartilage repair and osteoarthritis Seok Jung Kim* ¹ , Asode Ananthram Shetty ² ¹ The Catholic University of Korea, ² Institute of Medical Sciences, Faculty of Health and Social Sciences, Canterbury Christ Church University

S8-D	Session Topic	Biomaterials	
	Title	Natural compound-based biomaterials	
	Date	October 7 (Fri)	Time 13:00-14:30
	Room	Room 302	
	Chair(s)	Ki Su Kim (Pusan National University, Republic of Korea)	

S8-D-01	13:00-13:25 Keynote	Pollen-based materials innovation for sustainable technologies Nam Joon Cho* ¹ ¹ Nanyang Technological University, Singapore
S8-D-02	13:25-13:40	Metformin alters the mechanical behavior of common carotid arteries in type 2 diabetic mice Jungsil Kim* ¹ , Mi-Kyung Lee ¹ ¹ Sunchon National University, Republic of Korea
S8-D-03	13:40-13:55	Skin tissue engineering using decellularized scaffolds Dayamon Mathew* ² , Naveen Kumar ¹ , Vineet Kumar ³ , Swapan Maiti ¹ , Ashok Sharma ¹ , Anil K. Gangwar ⁴ ¹ Indian Veterinary Research Institute, ² Banaras Hindu University, ³ Sardar Vallabhbhai Patel University of Agriculture and Technology, ⁴ Narendra Deva University of Agriculture and Technology, India
S8-D-04	13:55-14:10	Enhancing effect of placental extract on regeneration of crush injured facial nerve Chul Ho Jang* ¹ , GyeongMin Lim ³ , GwangWon Cho ³ , Changjong Moon ² , Chitra Devi Ganesan ⁴ , Mary Jasmin Ang ² ¹ Chonnam National University, ² Department of Veterinary Anatomy, College of Veterinary Medicine and BK21 FOUR Program, Chonnam National University, 9 Gwangju, ³ BK21 FOUR Education Research Group for Age-Associated Disorder Control Technology, Department of Integrative Biological 6 Science, Chosun University, Gwangju, ⁴ K21 FOUR Education Research Group for Age-Associated Disorder Control Technology, Department of Integrative Biological 6 Science, Chosun University, Gwangju, Republic of Korea
S8-D-05	14:10-14:25	Edible plant-based scaffold for cultured meat Jasmine Seah* ¹ , Lay Poh Tan ¹ ¹ Nanyang Technological University, School of Materials Science and Engineering, Singapore

S8-E	Session Topic	Stem Cells	
	Title	Recent advances in stem cell applications	
	Date	October 7 (Fri)	Time 13:00~14:30
	Room	Room 303	
	Chair(s)	Byung Hyune Choi (Inha University, Republic of Korea) Won-Young Cho (Seoul National University Hospital, Republic of Korea)	

S8-E-01	13:00-13:18 Keynote	High antioxidation-capacity stem cells enhance cartilage regeneration Won-Young Cho* ¹ , Hyun Cheol Bae ¹ , Ha Ru Yang ¹ , Hee Jung Park ¹ , Sun Young Wang ¹ , You Jung Kim ¹ , Hyuk Soo Han ¹ ¹ Seoul National University Hospital, Republic of Korea
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S8-E-02	13:18-13:36	Confirming the ability of mesenchymal stem cells to promote fracture healing in a rat model of long bone shaft fracture and assessing the optimal cell concentration with the maximum therapeutic effect Myung-Seo Kim¹, Kang-Il Kim^{*2} ¹ Kyung Hee University, ² Kyung Hee University Hospital at Gangdong, Republic of Korea
S8-E-03	13:36-13:54	Development of iPSC-derived neuronal model for studying mitochondrial defects in leigh's syndrome Fazlina Nordin^{*1}, Izyan Mohd Idris¹, Nur Jannaim Muhammad², Rosnani Mohamed², Fatimah Diana Amin Nordin², Julaina Abdul Jalil², Gee Jun Tye⁴, Wan Safwani Wan Kamarul Zaman³, Min Hwei Ng¹ ¹ Centre for Tissue Engineering and Regenerative Medicine (CTERM), Universiti Kebangsaan Malaysia (UKM), ² Institute for Medical Research (IMR), National Institutes for Health (NIH), Ministry of Health (MOH), Malaysia, ³ Department of Biomedical Engineering, Faculty of Engineering, Universiti Malaya, Malaysia, ⁴ Institute for Research in Molecular Medicine (INFORMM), Universiti Sains Malaysia (USM), Malaysia
S8-E-04	13:54-14:12	Generation of human tonsil epithelial organoids as an ex vivo model for SARS-CoV-2 infection Jun-Yeol Park², Han Kyung Kim³, Hyeryeon Kim⁴, Myoung Kyu Lee¹, Woo Hee Choi⁷, Yejin Jang¹, Jin Soo Shin¹, Dong Hyuck Bae⁸, Seong-In Hyun², Kang Hyun Kim⁵, Meehyein Kim⁶, Young Chang Lim⁴, Jongman Yoo^{*3} ¹ Infectious Diseases Therapeutic Research Center, Korea Research Institute of Chemical Technology (KRICT), Daejeon, Republic of Korea, ² Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea., ³ Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea. b CHA Organoid Research Center, CHA University, Seongnam, Republic of Korea. c R&D Institute, Organoids Sciences Ltd., Seongnam, Republic of Korea, ⁴ Department of Otorhinolaryngology-Head and Neck Surgery, the Research Institute, Konkuk University School of Medicine, Seoul, Republic of Korea, ⁵ Department of Biomedical informatics, CHA University School of Medicine, CHA University, Seongnam, Republic of Korea, ⁶ Infectious Diseases Therapeutic Research Center, Korea Research Institute of Chemical Technology (KRICT), Daejeon, Republic of Korea Graduate School of New Drug Discovery and Development, Chungnam National, ⁷ Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea. b CHA Organoid Research Center, CHA University, Seongnam, Republic of Korea., ⁸ Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea. b CHA Organoid Research Center, CHA University, Seongnam, Republic of Korea.
S8-E-05	14:12-14:30	Adipose stem cell transplantation using viscous liquid phase protein-based adhesive coacervate for cartilage reconstruction Seong-Woo Maeng¹, Ji-Yun Ko², Gun-Il Im², Hyung Joon Cha^{*1} ¹ Department of Chemical Engineering, Pohang University of Science and Technology, Pohang 37673, ² Research institute of Convergence Life Science, Dongguk University, Goyangsi, Gyeonggi-do, Republic of Korea

S8-F	Session Topic	Enabling Technology
	Title	Recent advances in bioprinting technologies for tissue engineering
	Date	October 7 (Fri) Time 13:00-14:30
	Room	Room 401
	Chair(s)	Daniel Nieto (MERLN Institute for Technology-Inspired Regenerative Medicine, Netherlands)

S8-F-01	13:00-13:25 Keynote	Opportunities and challenges of light-based bioprinting technologies Daniel Nieto^{*1}, Lorenzo Moroni¹ ¹ Maastricht University, Netherlands
S8-F-02 CANCELLED	13:25-13:40	Cell encapsulation in gelatin bioinks impairs 3D resolution and the capacity of volumetric DLP bioprinting Amir K. Miri^{*1}, Hoda Fattel¹, Daniel Nieto², Elvan Dogan¹ ¹ New Jersey Institute of Technology, USA ² Maastricht University, USA
S8-F-03	13:40-13:55	Role of monomer molecular weight and molecular structure on digital light processing 3D / 4D printing Hossein Goodarzi Hosseinabadi^{*1}, Leonid Ionov¹ ¹ Bayreuth University
S8-F-04	13:55-14:10	Silk fibroin as a bioink for cardiovascular applications Laura Vettori¹, Habib Joukhdar², Anh Hien Tran², Hadi Mahmodi Sheik Sarmast¹, Elyse Filipe³, Thomas Cox³, Irina Kabakova¹, Jelena Rnjak-Kovacina², Carmine Gentile^{*1} ¹ University of Technology Sydney, ² University of New South Wales, ³ Garvan Institute of Medical Research, Australia
S8-F-05	14:10-14:25	Whole human extracellularmatrix (ECM) derived from neonatal dermal fibroblast and bone marrow MSC culture achieved complete burn wound regeneration Joshua Jaeyun Kim^{*1} ¹ ROKIT HEALTHCARE, Inc, Republic of Korea

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Symposia 9

October 7 (Fri) 14:30-16:00

Session code	Topic	Room #
S9-A	Tissue Engineering	Halla Hall
S9-B	Biomaterials	Samda Hall
S9-C	KSBMT Joint Sesion	Room 301
S9-D	Biomaterials	Room 302
S9-E	Stem Cells	Room 303
S9-F	Organoids	Room 401

S9-A	Session Topic	Tissue Engineering	
	Title	Tissue regenerative platforms for cartilage joints	
	Date	October 7 (Fri)	Time 14:30-16:00
	Room	Halla Hall	
	Chair(s)	Yoonhee Jin (Yonsei University College of Medicine, Republic of Korea) James Goh (Biomedical Engineering, National University of Singapore, Singapore)	

S9-A-01	14:30-14:55 Keynote	Enthesis regeneration in anterior cruciate ligament reconstruction James Goh* ¹ , Ernest X.H. Tan ¹ , James H.P. Hui ² ¹ Biomedical Engineering, National University of Singapore, ² Orthopaedic Surgery, National University of Singapore
S9-A-02	14:55-15:10	Osteochondral scaffold innovation for repair of large osteochondral defects: From bench to bedside Chaozong Liu* ¹ , Tamaddon Tamaddon ¹ ¹ University College London, United Kingdom
S9-A-03	15:10-15:25	Human synovial joint-mimicking organ-on-a-chip systems for disease modeling and drug testing Zhong Alan Li* ¹ , Rocky Tuan ¹ ¹ The Chinese University of Hong Kong
S9-A-04	15:25-15:40	Probing lateral integration of engineered cartilage spheroids in healthy and diseased microenvironments - a 3D in-vitro tissue fusion model Laura Veenendaal* ¹ , Khoon Lim ² , Gary Hooper ¹ , Tim Woodfield ¹ , Gabriella Lindberg ² ¹ University of Otago, ² University of Otago, New Zealand
S9-A-05	15:40-15:55	The role of microRNA-1 in cartilage repair and osteoarthritis Jiao Jiao Li* ¹ , Yang Yang ³ , Dan Xing ² ¹ University of Technology Sydney, ² Peking University People's Hospital, ³ Tianjin Hospital, Australia

S9-B	Session Topic	Biomaterials	
	Title	Biofunctional hydrogels to direct cell fate & tissue regeneration	
	Date	October 7 (Fri)	Time 14:30-16:00
	Room	Samda Hall	
	Chair(s)	Catherine Le Visage (Nantes Université, France) Junmin Lee (POSTECH, Republic of Korea)	

S9-B-01	14:30-14:55 Keynote	Biomimicking scaffolds for neural tissue regeneration Sing Yian Chew* ¹ ¹ Nanyang Technological University, Singapore
S9-B-02	14:55-15:10	Piezoelectric peptide-based injectable hydrogels for bone tissue engineering Ayse Kose* ² , Joris Bleukx ⁵ , Olivier Deschaume ¹ , Alexander Volodin ⁴ , Carmen Bartic ¹ , Liesbet Geris ³ ¹ Soft Matter Physics and Biophysics Section, KU Leuven, Leuven, Belgium, ² Prometheus Division of Skeletal Tissue Engineering, KU Leuven, Belgium; Skeletal Biology and Engineering Research Center, KU Leuven, Belgium; Biomechanics Section, KU Leuven, Belgium, ³ Prometheus Division of Skeletal Tissue Engineering, KU Leuven, Belgium; Skeletal Biology and Engineering Research Center, KU Leuven, Belgium; Biomechanics Section, KU Leuven, Belgium; GIGA In Silico Medicine, University of Liege, Liege, Belgium, ⁴ Department of Physics and Astronomy, KU Leuven, Leuven, Belgium, ⁵ Biomechanics Section, KU Leuven, Belgium
S9-B-03	15:10-15:25	Synthetic, tuneable and dynamic organoid matrices using novel self-assembling peptide hydrogels Ashley Nguyen* ¹ , Thomas Molley ¹ , Sylvia Ganda ¹ , Kristopher Kilian ¹ ¹ University of New South Wales, Australia
S9-B-04	15:25-15:40	Impact of alginate and monolayer culture on intervertebral disc progenitor Victor Leung* ¹ , Wai-Kit Tam ¹ , Yi SUN ¹ ¹ The University of Hong Kong
S9-B-05	15:40-15:55	Culture and differentiation of human pluripotent stem cells on mixed oligopeptide-grafted hydrogels Yen-Hung Chen* ¹ , Akon Higuchi ¹ ¹ National Central University, Chinese Taipei

S9-C	Session Topic	Joint Sesion	
	Title	KSBMT joint sesion	
	Date	October 7 (Fri)	Time 14:30-16:00
	Room	Room 301	
	Chair(s)	Kyung-Nam Koh (Asan Medical Center, Republic of Korea) Byung Hyune Choi (Inha University, Republic of Korea)	

S9-C-01	14:30-14:55 Keynote	Adoptive T-cell therapy using marrow-infiltrating lymphocytes for multiple myeloma Sung-Hoon Jung* ¹ ¹ Chonnam National University Hwasun Hospital, Republic of Korea
S9-C-02	14:55-15:10	Development and in vivo evaluation of anti-CD19 chimeric antigen receptor (CAR)-$\gamma\delta$ t cells Nayoung Kim ² , Hyery kim ¹ , Ho Joon Im ¹ , Kyung-Nam Koh* ¹ ¹ Asan Medical Center, ² Asan Institute for Life Sciences, Republic of Korea
S9-C-03	15:10-15:25	Impaired T cell function in microenvironment of multiple myeloma – implications for immunotherapy Yoon Seok Choi* ¹ ¹ Ajou University School of Medicine, Republic of Korea
S9-C-04	15:25-15:40	Natural killer cell activation receptor overexpression strategy through NKG2D mRNA-loaded polyplex Sehwan Jeong ¹ , Ha Yeon Park ² , Hyun Jin Kim ² , Kyobum Kim* ¹ ¹ Dongguk Univ., ² Inha Univ., Republic of Korea
S9-C-05	15:40-15:55	T-cell-derived nanovesicles for cancer immunotherapy Jihye Hong ¹ , Byung-soo Kim* ¹ ¹ Seoul National University, Republic of Korea

S9-D	Session Topic	Biomaterials	
	Title	Biomaterials for bone and cartilage regeneration	
	Date	October 7 (Fri)	Time 14:30-16:00
	Room	Room 302	
	Chair(s)	Kwideok Park (KIST, Republic of Korea) Yasuhiko Iwasaki (Kansai University, Republic of Korea)	

S9-D-01	14:30-14:55 Keynote	Reduced bone resorption by polyphosphoesters having a high mineral affinity Yasuhiko Iwasaki ¹ , Kenjiro Kiyono ¹ , Koji Takahashi ¹ , Shun Mabuchi ¹ , Sota Fukaura ¹ , Yasuhiko Iwasaki* ¹ ¹ Kansai University, Japan
S9-D-02	14:55-15:10	Effect of mechanical dose on characteristics of cartilaginous matrix production EunAh Lee* ² , Seoyoung Jang ¹ , Jin Gil Jeong ¹ , Tong In Oh ⁴ ¹ Department of Medical Engineering, Graduate School, Kyung Hee University, 26, Kyungheedaero, Dongdaemun-gu, Seoul, 02447, ² Medical Science Research Institute, Kyung Hee University Medical Center/ Impedance Imaging Research Center, Kyung Hee University, 26, Kyungheedaero, Dongdaemun-gu, Seoul, 02447, ³ Kyung Hee University, ⁴ Department of Biomedical Engineering, School of Medicine, Kyung Hee University/ Medical Device Research Center, Medical Science Research Institute, Kyung Hee University Medical Center, 26, Kyungheedar-ro, Dongdaemun-gu, Seoul, 02447, Republic of Korea
S9-D-03	15:10-15:25	Elastic photo-cross-linking hybrid hydrogel with high compressive modulus for bone tissue regeneration Honghyun Park* ¹ , Hui-suk Yun ¹ , Jueun Kim ¹ ¹ Korea Institute of Materials Science (KIMS), Republic of Korea
S9-D-04	15:25-15:40	Guided bone regeneration using 3D-printed resorbable PCL/β-TCP membrane Jeong-Ho Yun* ¹ , Subramanian Keerthana ¹ ¹ Jeonbuk National University College of Dentistry, Republic of Korea
S9-D-05	15:40-15:55	Subchondral bone remodelling spatially linked to the overlying cartilage degeneration in osteoarthritis progression Chaozong Liu* ¹ , Sara Ajami ¹ , Maryam Tamaddon ¹ ¹ University College London, United Kingdom

S9-E	Session Topic	Stem Cells	
	Title	Next generation biomaterials for Stem cell culture and differentiation	
	Date	October 7 (Fri)	Time 14:30-16:00
	Room	Room 303	
	Chair(s)	Akon Higuchi (National Central University, Chinese Taipei) Guoping Chen (National Institute for Materials Science, Japan)	

S9-E-01	14:30-14:55 Keynote	Functional scaffolds and biomimetic matrices for 3D culture of mesenchymal stem cells Guoping Chen* ¹ , Naoki Kawazoe ¹ ¹ National Institute for Materials Science, Japan
S9-E-02	14:55-15:10	Biomaterials grafted with several designed peptides for human pluripotent stem cell culture and differentiation Akon Higuchi* ¹ ¹ National Central University, Chinese Taipei

S9-E-03	15:10-15:25	Alginate-chitosan microencapsulated cells for improving hematopoietic stem cell's maintenance and expansion Retno Wahyu Nurhayati ^{*1} , Rafianto Dwi Cahyo ⁵ , Gita Pratama ⁴ , Wildan Mubarak ³ , Dian Anggraini ² ¹ Department of Chemical Engineering, Faculty of Engineering, Universitas Indonesia, ² Division of Biological Science, Graduate School of Science and Technology, Nara Institute of Science and Technology, ³ Department of Materials Engineering Science, Graduate School of Engineering Science, Osaka University, ⁴ Department of Obstetric and Gynecology, Faculty of Medicine, Universitas Indonesia - Dr. Cipto Mangunkusumo General Hospital, ⁵ Department of Biotechnology, Faculty of Engineering, Osaka University, Indonesia
S9-E-04	15:25-15:40	Engineering of hybrid spheroids of mesenchymal stem cells and drug depots for immunomodulating effect in islet xenotransplantation Tiep Nguyen ² , Nam Nhu Nguyen ¹ , Linh Nguyen ¹ , Junhyeung Park ¹ , Jee-Heon Jeong ¹ , Simmyung Yook ^{*2} ¹ Department of Precision Medicine, School of Medicine, Sungkyunkwan University Suwon, 16419, ² Department of Pharmaceutical Science, College of Pharmacy, Keimyung University, Daegu 42601, Republic of Korea
S9-E-05	15:40-15:55	The Role of Chemokine Receptor CXCR6 Expression on Differentiated Cells from Human Adipose Tissue-Derived Mesenchymal Stem Cells Yoojung Lee ¹ , Jongpil Kim ^{*1} ¹ Dongguk University, Republic of Korea

S9-F	Session Topic	Organoids
	Title	Organoid for disease modeling
	Date	October 7 (Fri)
	Time	14:30-16:00
	Room	Room 401
Chair(s)	Yongsung Hwang (Soonchunhyang University, Republic of Korea) Jin Woo Lee (Gachon University, Republic of Korea)	

S9-F-01	14:30-14:55 Keynote	Recent update of modeling of human kidney diseases using hPSCs-derived kidney organoids Yong Kyun Kim ^{*1} ¹ Cell Death Disease Research Center, College of Medicine, The Catholic University of Korea/Division of Nephrology, Department of Internal Medicine, The Catholic University of Korea, Republic of Korea
S9-F-02	14:54-15:10	Modeling heart disease using hiPSC-derived cardiac organoids Dong-Hun Woo ^{*1} ¹ NEXEL Co., Ltd., Republic of Korea
S9-F-03	15:10-15:25	Alveolar organoids from human pluripotent stem cells: Research and applications Seok-Ho Hong ^{*1} ¹ Department of Internal Medicine, School of Medicine, Kangwon National University, Republic of Korea
S9-F-04	15:25-15:40	Development of in vitro mechanical spinal cord injury model in differentiated NSC-34 cells Anam Anjum ¹ , Muhammad Dain Yazid ¹ , Muhammad Fauzi Daud ³ , Jalilah Idris ³ , Angela Min Hwei Ng ¹ , Amaramalar Selvi Naicker ² , Ohnmar Htwe Ismail ² , Ramesh Kumar Athi Kumar ⁴ , Yogeswaran Lokanathan ^{*1} ¹ Center of Tissue Engineering and Regenerative medicine, Faculty of Medicine, University Kebangsaan Malaysia, Jalan Yaacob Latif, 56000 Cheras, Kuala Lumpur, ² Department of Orthopaedics & Traumatology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur 56000, ³ Institutes of Medical Science Technology, Universiti Kuala Lumpur Malaysia, Kajang 43000, ⁴ Department of Surgery, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur 56000
S9-F-05	15:40-15:55	The developmental metabolism of brain organoids Kyoung-ha So ^{*1} , WonMoon Song ¹ , Hodong Seok ² , Nathaniel S. Hwang ¹ ¹ Seoul National University, ² Seoul National University College of Medicine, Republic of Korea

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Symposia 10 / FTERM

October 7 (Fri) 16:30-18:00		
Session code	Topic	Room #
S10-A	CARM Joint Sesion	Halla Hall
S10-B	Biomaterials	Samda Hall
S10-C	Obstetrics and Gynecology	Room 301
S10-D	Biomaterials	Room 302
S10-E	Stem Cells	Room 303
S10-F	Organoids	Room 401
October 7 (Fri) 18:10-18:50		
	Topic	Room #
	FTERM	Halla Hall

S10-A	Session Topic	Joint Sesion	
	Title	CARM joint session	
	Date	October 7 (Fri)	Time 16:30-18:10
	Room	Halla Hall	
	Chair(s)	Kyung-Sun Kang (Seoul National University, Republic of Korea) Byung Hyune Choi (Inha University, Republic of Korea)	

S10-A-01	16:30-16:50 Keynote	Cell therapy: From fibroblasts to CAR-T/NK and organoids beyond stem cells Kang Kyung-Sun * ¹ ¹ Seoul National University, Republic of Korea
S10-A-02	16:50-17:05	The newest R&D trend in Organoidsciences' technologies Hyejin Kim ¹ , Suyoung Jo ¹ , Woo Hee Choi ¹ , Kyungjin Lee* ² ¹ ORGANOIDS SCIENCES, LTD, ² ORGANOIDS SCIENCES, LTD, Republic of Korea
S10-A-03	17:05-17:20	Allogenic pre-osteoblast cells (CF-M801) to treat osteonecrosis of the femoral head Hyun-Sook Park * ¹ ¹ CEFO Co., Ltd., Republic of Korea
S10-A-04	17:20-17:35	Role of recombinant human hyaluronan and proteoglycan link protein 1 on dry eye disease Yongsoo Kim * ¹ , Jung-Hoon Pyo ¹ , David Kim ¹ ¹ HAPLN SCIENCE, Republic of Korea
S10-A-05	17:35-17:50	An effective therapy for critical limb ischemia using endothelial progenitor cells from human umbilical cord blood Chi Young Chang ¹ , Seung Ho Yoo* ¹ ¹ YOUTH BIO GLOBAL, Republic of Korea
S10-A-06	17:50-18:05	Xcell therapeutics: groundwork for reliable and reproducible regenerative medicine solutions Jimmy Lee * ¹ ¹ Xcell Therapeutics, Republic of Korea
S10-A-07	18:05-18:10	Introduction of CARM Byung Hyune Choi * ¹ ¹ Council for Advanced Regenerative Medicine (CARM), Inha University College of Medicine, Republic of Korea

S10-B	Session Topic	Biomaterials	
	Title	A partnership between natural biomolecules and biomaterials: towards new surface functionalities	
	Date	October 7 (Fri)	Time 16:30-18:00
	Room	Samda Hall	
	Chair(s)	Silvia Spriano (Politecnico di Torino, Italy)	

S10-B-01	16:30-16:55 Keynote	Surface functionalization and coating of titanium alloys Silvia Spriano * ¹ ¹ Politecnico di Torino, Italy
S10-B-02	16:55-17:10	Matrix ligand/protein conjugated hydrogels for tissue engineering applications Junmin Lee * ¹ ¹ POSTECH, Republic of Korea
S10-B-03	17:10-17:25	Cell/tissue adhesive, antibacterial hydrogels based on fungal-derived carboxymethyl chitosan and tannic acid via drug-free approach for wound healing applications Madhusudana Kummara ¹ , Soon Mo Choi ¹ , Sung Soo Han* ¹ ¹ School of Chemical Engineering and Research Institute of cell culture, Yeungnam University, Gyeongsan-38541, Republic of Korea
S10-B-04	17:25-17:40	Controllable and switchable drug delivery platform by carbon-based 3D hydrogel sponges Ji-Young Hwang ¹ , Ueon Sang Shin* ² ¹ Korea Carbon Industry Promotion Agency, Republic of Korea ² Dankook University, Republic of Korea
S10-B-05	17:40-17:55	Polypeptide-fueled transient volume phase transition of a hydrogel Masahiko Nakamoto ¹ , Michiya Matsusaki* ¹ ¹ Division of Applied Chemistry, Graduate School of Engineering, Osaka University, Japan

S10-C

Session Topic	Obstetrics and Gynecology	
Title	Regeneration of reproductive tissues and organs	
Date	October 7 (Fri)	Time 16:30-18:00
Room	Room 301	
Chair(s)	Seung-Yup Ku (Seoul National University Hospital, Republic of Korea) Chun-Ho Kim (KIRAMS, Republic of Korea)	

S10-C-01	16:30-16:55 Keynote	<p>Uterus-specific extracellular scaffolds and stem cells promote tissue regeneration after extensive injury in rodents Sara Bandstein^{*1}, Sara Lopez Martinez³, Edina Sehic², Mats Brännström¹, Mats Hellström¹</p> <p>¹Laboratory for Transplantation and Regenerative Medicine, Department of obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Kvinnokliniken, Blu00e5 stru00e5ket 6, 413 45, Gu00f6teborg, Sweden, ²Laboratory for Transplantation and Regenerative Medicine, Department of obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ³IVI Foundation Edificio Biopolo, instituto de Investigaci00f3n Sanitaria la Fe Avenida Fernando Abril Martorell, 106 Torre A, Planta 1a 46026, Valencia, Sweden</p>
S10-C-02	16:55-17:10	<p>Recellularization with mesenchymal stem cells contribute to an immunotherapeutic microenvironment in vivo after decellularized rat uterus tissue transplantation Edina Sehic^{1,2}, Emy Thorén^{1,2}, Ingigerdur Gudmundsdottir^{1,2}, Mihai Oltean^{1,3}, Mats Brännström^{1,2,4}, Mats Hellström^{*1,2}</p> <p>¹Laboratory for Transplantation and Regenerative Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ²Dept. of Obstetrics and Gynecology, Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ³Dept. of Surgery, Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ⁴Stockholm IVF-EUGIN, Hammarby allé 93, Stockholm, Sweden</p>
S10-C-03	17:10-17:25	<p>Artificial oviduct system for preimplantation embryo based on the mechanical mimic condition Jae Ho Lee^{*2}, Min Jeong Cho³, Yu Jin Kim³, JuYi Chang¹, Ji Eun Lee¹, Yun Dong Koo¹</p> <p>¹Department of Biomedical Sciences, CHA University, ²CHA University, ³CHA Fertility Center Seoul Station, Republic of Korea</p>
S10-C-04	17:25-17:40	<p>Differentiation into follicle-like cells using ovarian spheroid Yoon Young Kim^{*1}, Jiyeon Han¹, Sung Woo Kim¹, Seung-Yup Ku¹</p> <p>¹Seoul National University Hospital, Republic of Korea</p>
S10-C-05	17:40-17:55	<p>Application of experimental in vitro model to evaluate uterine receptivity for embryo Yong Jin Kim^{*1}</p> <p>¹Korea University, Republic of Korea</p>

S10-D

Session Topic	Biomaterials	
Title	Biomaterials-mediated drug delivery strategies	
Date	October 7 (Fri)	Time 16:30-18:00
Room	Room 302	
Chair(s)	Kyobum Kim (Dongguk University, Republic of Korea) Yasuhiko Tabata (Laboratory of Biomaterials, Institute for Life and Medical Sciences, Kyoto University, Japan)	

S10-D-01	16:30-16:55 Keynote	<p>Biomaterials design of tissue engineering to enhance natural-hearing potentials for regenerative medicine Yasuhiko Tabata^{*1}</p> <p>¹Laboratory of Biomaterials, Institute for Life and Medical Sciences, Kyoto University, Japan</p>
S10-D-02	16:55-17:10	<p>A human osteoarthritis cartilage explant model for assessing the effectiveness of antibody-conjugated cell micromass targeted delivery ease Angela MH Ng^{*1}, Shamsul Sulaiman¹, Rizal Abdul Rani¹, Nor Hamdan Yahaya¹, Yasuhiko Tabata³, Yosuke Hiraoka²</p> <p>¹Universiti Kebangsaan Malaysia, ²Nitta Gelatin, ³Kyoto University, Malaysia</p>
S10-D-03 CANCELLED	17:10-17:25	<p>Osmoprocessor for enabling highly sensitive biomarker detection via lateral flow assays James Lai^{*1}, Sheng-You Chen², Abe Wu¹, Ruby Lunde¹</p> <p>¹Department of Bioengineering, University of Washington, ²Department of Mechanical Engineering, University of Washington, USA</p>
S10-D-04	17:25-17:40	<p>In vitro dendritic cell activation via exogenous delivery of tumor cell lysate using coacervate Jihyun Seong¹, Kyobum Kim^{*1}</p> <p>¹Dongguk university, Republic of Korea</p>
S10-D-05	17:40-17:55	<p>Chemical and biomolecular surface modification of electrospun nanofibers for localized delivery of adeno-associated viral (AAV) vectors Sgirim Lee¹, Jae-Hyung Jang^{*1}</p> <p>¹Yonsei University, Republic of Korea</p>

S10-E	Session Topic	Organoids
	Title	Gene editing and manipulation for stem cell engineering and regenerative medicine
	Date	October 7 (Fri) Time 16:30-18:00
	Room	Room 303
	Chair(s)	Yu-Chen Hu (National Tsing Hua University, Chinese Taipei) Pavel Makarevich (Lomonosov Moscow State University, Russia)

S10-E-01	16:30-16:55 Keynote	CRISPR-based gene manipulation for stem cell engineering and regenerative medicine Yu-Chen Hu ^{*1} ¹ National Tsing Hua University, Chinese Taipei
S10-E-02	16:55-17:10	GENE modification of human MSC for increased therapeutic potency via paracrine activity Pavel Makarevich ^{*1} , Maria Boldyreva ² , Stalik Dzhaunari ¹ , Maxim Karagayur ¹ , Yelena Parfyonova ² ¹ Lomonosov Moscow State University, Russia, ² National medical research center of cardiology, Russia
S10-E-04	17:10-17:25	CRISPR-based bidirectional gene regulation for improved chondrogenic differentiation and calvarial bone regeneration in osteoporotic animal Anh Vu Truong ¹ , Ya-Hui Lin ¹ , Thi Kieu Nuong Nguyen ¹ , Mu-Nung Hsu ¹ , Yu-Chen Hu ^{*1} ¹ National Tsing Hua University, Chinese Taipei
S10-E-05	17:25-17:40	Bone regeneration using 3D-printing hybrid bone scaffold in canine radial bone defect Yoon Jae Lee ³ , Yeon Hee Ryu ¹ , Su Jin Lee ¹ , Suk-Ho Moon ¹ , Ki Joo Kim ⁷ , Byeong Ju Jin ² , Kyoung-Don Lee ² , Jung Kyu Park ⁶ , Jin Woo Lee ⁸ , Seung-Jae Lee ⁵ , Hun-Jin Jeong ⁴ , Jong Won Rhie ^{*1} ¹ Department of Plastic and Reconstructive Surgery, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea, ² AI & Mechanical System Center, Institute for Advanced Engineering, Yongin 17180, Korea, ³ Yeouido St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea, ⁴ Regenerative Engineering Laboratory, Center for Dental and Craniofacial Research, Columbia University Irving Medical Center, New York, USA, ⁵ Department of Mechanical and Design Engineering, College of Engineering, Wonkwang University, Iksan, Republic of Korea, ⁶ Department of Health Sciences and Technology, GAIHST, Gachon University, Republic of Korea, ⁷ Department of Cell Therapy Center of Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea, ⁸ Department of Molecular Medicine, College of Medicine, Gachon University, Republic of Korea

S10-F	Session Topic	Organoids
	Title	Organoid for tissue regeneration
	Date	October 7 (Fri) Time 16:30-18:00
	Room	Room 401
	Chair(s)	Yongsung Hwang (Soonchunhyang University, Republic of Korea) Yu Suk Choi (University of Western Australia, Australia)

S10-F-01	16:30-16:55 Keynote	Designing bioink, bioresin and multicellular spheroid fusion platforms for musculoskeletal regenerative medicine and disease modelling Tim Woodfield ^{*1} , Khoon Lim ² , Gabriella Lindberg ¹ , Xiaolin Cui ¹ , Caroline Murphy ¹ , Gary Hooper ¹ ¹ CReaTE Group, Department of Orthopaedic Surgery & Musculoskeletal Medicine, Centre for Bioengineering & Nanomedicine, University of Otago Christchurch, ² Light Activated Biomaterials Group, Department of Orthopaedic Surgery & Musculoskeletal Medicine, Centre for Bioengineering & Nanomedicine, University of Otago Christchurch, New Zealand
S10-F-02	16:55-17:10	Volume adaptation in 3D encapsulated cardiac spheroids Yu Suk Choi ^{*1} , Ian Chin ² , Sebastian Amos ² ¹ University of Western Australia, ² University of Western Australia, School of Human Sciences, Australia
S10-F-03	17:10-17:25	Induction of osteocyte differentiation for mesenchymal stem cells in 3D scaffold-free spheroid culture Jeonghyun Kim ^{*1} , Taiji Adachi ² , Takeo Matsumoto ¹ ¹ Nagoya University, ² Kyoto University, Japan
S10-F-04	17:25-17:40	The approval of the ATORM-C for the first in human trial in Republic of Korea (Adult tissue derived organoid based regenerative medicine) Armin Dadafshar ¹ , Jun-Hyeok Park ¹ , Taegy Lim ¹ , Hyemi Jeon ¹ , Ha Young Song ¹ , HyeJin Kim ¹ , Suyoung Jo ¹ , Woo Hee Choi ¹ , Jongman Yoo ¹ , Kyung Jin Lee ^{*1} ¹ ORGANOIDSCIENCES Ltd.
S10-F-05	17:40-17:55	Full automation system for stem cell spheroid fabrication and mass production Seong Keun Kwon ^{*1} ¹ Seoul National University Hospital, Republic of Korea



Session Topic	FTERM
Title	How can TERMIS make a real impact on regenerative medicine within the next 10 years?
Date	October 7 (Fri) Time 18:10-18:50
Room	Room 401
Chair(s)	Geoff Richards (AO Foundation, Switzerland)

In open discussion panel session, the audience are invited to ask questions within this topic (How can TERMIS make a real impact on regenerative medicine within the next 10 years) to the fellows.

We would like to make this session as interactive as possible and are happy for audience participation.

R.Geoff Richards, Chair of the FTERM

INTERNATIONAL FELLOWS OF TISSUE ENGINEERING AND REGENERATIVE MEDICINE (FTERM)

The International Fellows of Tissue Engineering and Regenerative Medicine (FTERM) was created to recognize a distinguished leader within the tissue engineering and regenerative medicine field. FTERM was established to recognize an individuals role in shaping the tissue engineering and regenerative medicine field and TERMIS.

- Honorary status to recognize individuals that have made outstanding contributions to the field of TERM, with outputs of clear professional excellence.
- The distinguished members of TERMIS that are recognized as Fellows should be role models for members of the Society and others in the field.
- Fellows are expected to foster new activities and continue to act as leaders in the field, supporting its development.

<https://termis.org/international-fellows-tissue-engineering-and-regenerative-medicine-fterm>

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

Symposia 11

October 8 (Sat) 10:30-12:30

Session code	Topic	Room #
S11-A	Tissue Engineering	Halla Hall
S11-B	Biomaterials	Samda Hall
S11-C	Stem Cells	Room 301
S11-D	Biomaterials	Room 302
S11-E	Stem Cells	Room 303
S11-F	Enabling Technology	Room 401

S11-A	Session Topic	Tissue Engineering
	Title	Combination technology of cell & biomaterials for effective tissue repair
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Halla Hall
	Chair(s)	Kyobum Kim (Dongguk University, Republic of Korea) Mikolaj Ogrodnik (Ludwig Boltzmann Research Group SHoW - Senescence and Healing of Wounds, Austria)

S11-A-01	10:30-10:55 Keynote	Highlights of the Austrian cluster for tissue regeneration: The p-rpS6-zone delineates wounding response and the healing process Mikolaj Ogrodnik ^{*1} , Heinz Redl ¹ ¹ Ludwig Boltzmann Research Group SHoW - Senescence and Healing of Wounds, Austria
S11-A-02	10:55-11:10	Mammalian cell aging is associated with the mechanical environment on the hydrogel Yun Dong Koo ^{*1} , Ju Hwan Kim ¹ , Sung Won Jang ¹ , Min Jeong Cho ² , Yun Jin Kim ³ , Jae Ho Lee ^{1,2} ¹ Department of Biomedical Science, College of Life Science, CHA University, Pocheon, 11160, ² CHA Fertility Center, Seoul Station, Hangang-daero, Jung-gu, Seoul, 04637, ³ Mitoimmune Therapeutics Inc., Gangnam-gu, Seoul, Republic of Korea
S11-A-03	11:10-11:25	A roadmap of colPatchTM acellular skin substitute- a potential solution for full-thickness skin loss Mh Busra Fauzi ^{*1} , Ruszymah Bt Hj Idrus ¹ ¹ Centre for Tissue Engineering and Regenerative Medicine (CTERM), Faculty of Medicine, Universiti Kebangsaan Malaysia
S11-A-04	11:25-11:40	Decellularized extracellular matrix (DECM) reactor Deepak Choudhury ^{*1} , Jia Sheng Lee ¹ , Ahmad Amirul Abdul Rahim ¹ , Weng Wan Chan ¹ , Satnam Singh ¹ , May Win Naing ¹ ¹ BTI A*STAR, Singapore
S11-A-05	11:40-11:55	Injectable composite hydrogel embedded with eutectic Ga/In liquid metal particles for photothermal and chemotherapy against breast cancer Wonjeong Lee ¹ , Chaeun Lee ¹ , Kyobum Kim ^{*1} ¹ Dongguk University, Republic of Korea
S11-A-06	11:55-12:10	Chitosan-based nanofibrous polyelectrolyte complex for rapid hemostasis Balaram Mishra ^{*1} , DEVENDRA PATHAK ² , DEVENDRA VERMA ¹ , Mukesh Kumar Gupta ¹ ¹ National Institute of Technology Rourkela, ² GADVASU Ludhiana, Punjab, India
S11-A-07	12:10-12:25	Biocompatible Ag₂S nanodots: Mussel protein-based NIR light-responsive for imaging-guided photodynamic anticancer therapy Mou Seung Kim ¹ , Inho Nam ² , Hyung Joon Cha ² , Yun Kee Jo ^{*1,3} ¹ Department of Biomedical Convergence, School of Convergence, Kyungpook National University, Daegu 41566, Korea, ² Department of Chemical Engineering, Pohang University of Science and Technology, Pohang 37673, Korea, ³ Cell and Matrix Research Institute, Kyungpook National University, Daegu 41944, Republic of Korea

S11-B	Session Topic	Biomaterials
	Title	Nanomedicine: The impact of nanotechnology on tissue engineering and regenerative medicine
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Samda Hall
	Chair(s)	Yongsung Hwang (Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, Republic of Korea) Thomas Webster (Hebei University of Technology, USA)

S11-B-01	10:30-10:55 Keynote	25 years of commercializing nanomedicine: from tissue engineering to fighting COVID Thomas Webster ^{*1} ¹ Hebei University of Technology, USA
S11-B-02	10:55-11:10	Advances in cell coculture porous membranes: Recapitulation of in vivo microenvironments Jin Yoo ^{*1} ¹ Korea Institute of Science and Technology, Republic of Korea
S11-B-03	11:10-11:25	Biomimetic virus-based de novo soft tissue niche engineering So Young Yoo ^{*1} ¹ Pusan National University, Republic of Korea
S11-B-04	11:25-11:40	Establishing an attractive regenerative alliance: Human mesenchymal stem cells and nanomagnetic materials Luminita Labusca ^{*2} , Daniel Herea ¹ , Anca Emanuela Minuti ¹ , Camelia Danceanu ¹ , Horia Chiriac ¹ , Nicoleta Lupu ¹ ¹ National Institute of Research and Development in Technical Physics Iasi, ² National Institute of Research and Development in Technical Physics, Romania
S11-B-05	11:40-11:55	A pre-clinical animal study for zonal articular cartilage regeneration using stratified implantation of microcarrier expanded zonal chondrocytes Zheng Yang ^{*1} , Ching Ann Tee ³ , Yingnan Wu ¹ , Jongyoon Han ² , Eng Hin Lee ¹ ¹ National University of Singapore, ² Massachusetts Institute of Technology, ³ Singapore-MIT Alliance in Research and Technology, Singapore

S11-B-06	11:55-12:10	3D printing of assemblable bespoke scaffold as versatile microcryogel carrier for site-specific regenerative medicine Seunghun S. Lee¹ , Nicole Kleger ⁴ , Xiaoyu Du ¹ , Thijs Smit ³ , Andre R. Studart ² , Stephen J. Ferguson* ¹ ¹ Institute for Biomechanics, Department of Health Science and Technology, ETH Zurich, ² Complex Materials, Department of Materials, ETH Zurich, Switzerland, ³ Institute for Biomechanics, Department of Health Science and Technology, ETH Zurich, Switzerland, ⁴ Complex Materials, Department of Materials, ETH Zurich, Switzerland
S11-B-07	12:10-12:25	Understanding the role of focal adhesion in regulating dedifferentiation of chondrocytes using a cell traction and intracellular force microscopy Yongsung Hwang*¹ ¹ Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, Republic of Korea

S11-C	Session Topic	Stem Cells
	Title	Stem cell-based therapies - bench-to-bedside
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Room 301
	Chair(s)	Jihwan Song (CHA University / iPS Bio, Republic of Korea) Tea Soon Park (NIH, USA)

S11-C-01	10:30-11:00 Keynote	A phase I/IIA trial to test safety and feasibility of an autologous IPS cell-derived retinal pigment epithelium patch in age-related macular degeneration patients Kapil Bharti*¹ , Ruchi Sharma ¹ , Arvydas Maminishkis ¹ ¹ NIH, USA
S11-C-02	11:00-11:15	Omics analytical data sets for quality control of iPSC-based manufacturing Jung-Hyun Kim*¹ , Da Yeon Gil ¹ ¹ Korea National Institute of Health, Republic of Korea
S11-C-03	11:15-11:30	3D bioprinted choroid and RPE to investigate dry-AMD mechanism Tea Soon Park¹ , Russell Quinn ¹ , Rishabh Hirday ¹ , Amir Ali ¹ , Eric Nguyen ¹ , Devika Bose ¹ , Ruchi Sharma ¹ , Kapil Bharti* ¹ ¹ NIH, USA
S11-C-04	11:30-11:45	Targeting senescent retinal pigment epithelium for retinal regeneration: An emerging therapy for age-related macular degeneration Hyewon Chung*¹ , Jae-Byoung Chae ¹ , Chaekyu Kim ³ , Ja-Hyoung Ryu ² ¹ Konkuk University School of Medicine, ² UNIST, ³ Fusion Biotechnology, Republic of Korea
S11-C-05	11:45-12:00	Cell and gene therapy for Huntington's disease Jihwan Song*¹ ¹ CHA University / iPS Bio, Republic of Korea
S11-C-06	12:00-12:15	The immunomodulatory effect of adipose-derived stem cells in the human-to-rat xenograft skin transplantation model SungMi Jeon¹ , Sang Wha Kim* ¹ ¹ Seoul National University, Republic of Korea
S11-C-07	12:15-12:30	Biomimetic scaffold composition benefits hMSCs differentiation towards the specific lineage Xingxing Yang¹ , Barbara Pui Chan* ¹ ¹ Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, China

S11-D	Session Topic	Biomaterials
	Title	Biomaterials for 3D in vitro tissue-engineered cancer/disease models
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Room 302
	Chair(s)	Rui L. Reis (3B's Research Group, I3Bs, Portugal)

S11-D-01	10:30-10:55 Keynote	A scaffold platform for sinonasal cancers: In-depth tumor understanding for personalized therapy Serena Danti*¹ , Claudio Ricci ¹ , Stefano Berrettini ¹ , Alessandro Franchi ¹ ¹ University of Pisa, Italy
S11-D-02	10:55-11:10	Decellularized bone hydrogel as 3D tumor model for oral squamous cell carcinoma invasion and drug response Subha Rath*¹ , Sukanya V. S. ¹ ¹ IIT Hyderabad, India
S11-D-03	11:10-11:25	3D disease modelling of hard and soft cancer using PHA based scaffolds Ipsita Roy³ , Pinar Uysal Onganer ² , Pooja Basnett ² , Uttam Pati ¹ , Akansha Tomar* ¹ ¹ Jawaharlal Nehru University, ² University of Westminster, ³ University of Sheffield, United Kingdom

S11-D-04 CANCELLED	11:25- 11:40	<p>An integrated precision medicine platform CIT-CoPT toward treating advanced colorectal cancer patients Zheng Wang^{*3}, Xingyue Wang¹, Xiaohuan Lu⁴, Bo Cai², Xiaoqiong Li², Danyi Zou¹, Shijun Lei¹, Luming Xu², Guobing Wang⁴, Lin Wang¹</p> <p>¹Department of Clinical Laboratory, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, ²Research Center for Tissue Engineering and Regenerative Medicine, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, ³Huazhong University of Science and Technology, ⁴Department of Gastrointestinal Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China</p>
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S11-E	Session Topic	Stem Cells
	Title	New frontiers in stem cells and novel biomaterials based regenerative therapies
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Room 303
	Chair(s)	Sanjiv Dhingra (University of Manitoba, Canada) Chieh-Cheng Huang (National Tsing Hua University, Chinese Taipei)

S11-E-01	10:30- 10:55 Keynote	<p>Direct reprogramming toward cardiovascular tissue and its cardiac regenerative effects Young-sup Yoon^{*1}</p> <p>¹Emory University, USA</p>
S11-E-02	10:55- 11:10	<p>Next generation immunomodulatory biomaterials to prevent rejection of transplanted stem cells in the infarcted heart Sanjiv Dhingra^{*2}, Weiang Yan¹, Alireza Rafieerad¹, Niketa Sareen³, Keshav Alagarsamy¹</p> <p>¹Institute of Cardiovascular Sciences, St. Boniface Hospital Research Centre, Regenerative Medicine Program, Physiology and Pathophysiology, University of Manitoba, ²St. Boniface Hospital Research Centre, University of Manitoba, ³University of Manitoba</p>
S11-E-03	11:10- 11:25	<p>Exosome-MFGE8 aids in phagocytosis of dead cells and cardiac regeneration and repair Prasanna Krishnamurthy^{*1}, Mallikarjun Patil¹, Sherin Saheera¹, Hind Lal¹, Jianyi Zhang¹, Gangjian Qin¹</p> <p>¹University of Alabama at Birmingham, USA</p>
S11-E-05	11:25- 11:40	<p>Injectable neural stem cell-laden gelatin-based bioink for 3D bioprinting an in vitro brain tissue model Yi-Chen Li^{*1}</p> <p>¹Feng Chia University, Chinese Taipei</p>
S11-E-06	11:40- 11:55	<p>Neuroprotective and pro-angiogenic three-dimensional stem cell spheroids for treating ischemic stroke Chieh-Cheng Huang^{*1}, Ting-Wei Hsu¹</p> <p>¹Institute of Biomedical Engineering, National Tsing Hua University, Chinese Taipei</p>
S11-E-07	11:55- 12:10	<p>Real-time monitoring the dynamics of collagen of extracellular matrix secreted during chondrogenesis using fluorescence labeling with azide-proline both in single cell and tissue levels Jinho Park¹, In Su Park⁴, Moon Suk Kim³, Byoung-Hyun Min^{*2}</p> <p>¹Ajou university, ²Department of Orthopedic Surgery, School of Medicine, Ajou University, ³Department of Molecular Science & Technology, Ajou University, ⁴Cell Therapy Center, Ajou University Medical center, Republic of Korea</p>

S11-F	Session Topic	Enabling Technology
	Title	Tumor engineering with biomaterials
	Date	October 8 (Sat) Time 10:30-12:30
	Room	Room 401
	Chair(s)	Jennifer Young (National University of Singapore, Singapore) Giulia Adriani (Agency for Science, Technology and Research (A*STAR), Singapore)

S11-F-02	10:30- 10:55 Keynote	<p>Deconstructing a complex microenvironment with geometrically structured microtumours Kris Kilian^{*1}</p> <p>¹UNSW Sydney, Australia</p>
S11-F-03	10:55- 11:10	<p>Engineering tumor slice cultures ex vivo for personalized drug testing Eliza Fong^{*1}, Gopal Iyer², Christabella Adine¹, Kanishka Fernando¹, Nicholas Ho¹</p> <p>¹National University of Singapore, ²National Cancer Centre Singapore</p>
S11-F-04	11:10- 11:25	<p>A physiologically-relevant in vitro 3D microfluidic model of glioblastoma and the blood-brain barrier for studying solid tumour heterogeneity, tumour microenvironment and therapy validation Maxine Lam^{*1}, Andrea Pavesi²</p> <p>¹Institute of Molecular and Cell Biology A-STAR, ²IMCB A-STAR, Singapore</p>
S11-F-05	11:25- 11:40	<p>3D microphysiological systems for pre-clinical screening of anti-tumor therapies Giulia Adriani^{*1}</p> <p>¹Agency for Science, Technology and Research (A*STAR), Singapore</p>

S11-F-06	11:40- 11:55	<p>Recapitulating intratumoral morphological heterogeneity in a bioprinted breast cancer model for personalized medicine Jonghyeuk Han¹, Seunggyu Jeon¹, Min Kyeong Kim¹, Wonwoo Jeong¹, James J. Yoo², Hyun-Wook Kang^{*1} ¹Department of Biomedical Engineering, Ulsan National Institute of Science and Technology (UNIST), ²Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, Medical Center Boulevard, Republic of Korea</p>
S11-F-07	11:55- 12:10	<p>When cancer cells leave their comfort zone: Phenotype switching of breast cancer cells upon crossing tissue interfaces Jiranuwat Sapudom^{*2}, Philipp Riedl¹, Cornelia Clemens¹, Laura Orgus¹, Alexandra Proeger¹, Jeremy Teo², Tilo Pompe¹ ¹Institute of Biochemistry, Leipzig University, 04103 Leipzig, Germany, ²Laboratory for Immuno Bioengineering Research and Applications, Division of Engineering, New York University Abu Dhabi, Abu Dhabi, UAE, United Arab Emirates</p>

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

SYIS Oral Sessions

October 5 (Wed)		
Session code	Topic	Room #
S1-F	SYIS 1 - Tissue Regeneration	Room 401
S2-F	SYIS 2 - Biomaterials	Room 401
October 6 (Thu)		
S3-F	SYIS 3 - Delivery systems	Room 401
S4-F	SYIS 4 - Stem Cell Engineering	Room 401
S5-F	SYIS 5 - Organ-Mimetic Platforms	Room 401
S6-F	SYIS 6 - Mentoring Session	Room 401

S1-F

Session Topic	SYIS	
Title	Tissue regeneration	
Date	October 5 (Wed)	Time 14:30-16:00
Room	Room 401	
Chair(s)	Hwan Kim (Korea National University of Transportation, Republic of Korea) Mako Kobayashi (Tokyo Medical and Dental University, Japan)	

S1-F-01	14:30-14:40	The effects of matrix-bound nanovesicles (MBVs) derived from high-hydrostatic pressure decellularized tissues on neural regeneration Mako Kobayashi ¹ , Naoki Ishida ¹ , Yoshihide Hashimoto ¹ , Jun Negishi ⁵ , Hideki Saga ⁴ , Takehiro Iwanaga ³ , Yoshihiro Sasaki ² , Kazunari Akiyoshi ² , Tsuyoshi Kimura ¹ , Akio Kishida ^{*1} ¹ Tokyo Medical and Dental University, ² Kyoto University, ³ Kagoshima University, ⁴ KM biologics Co., Ltd., ⁵ Shinshu University, Japan
S1-F-02	14:40-14:50	Interactions between macrophage and human fibroblast-derived extracellular matrix leads to advanced wound healing Cininta Savitri ¹ , Sang Su Ha ¹ , Jae Won Kwon ¹ , Song Hoon Kim ¹ , Young-Min Kim ¹ , Kwideok Park ^{*1} ¹ Korea Institute of Science and Technology, Republic of Korea
S1-F-03	14:50-15:00	Exploring the use of regulatory T cells to promote tissue repair and regeneration Bhavana Nayer ¹ , Jean Tan ¹ , Yasmin Alshoubaki ¹ , Ziad Julier ¹ , Anthony Park ¹ , Ajithkumar Vasanthakumar ² , Mikael Martino ^{*1} ¹ Australian Regenerative Medicine Institute, Monash University, ² Olivia Newton-John Cancer Research Institute, Australia
S1-F-04	15:00-15:10	A designed spacer for resolving collagen hydrogel contraction Shih-Yen Wei ¹ , Yu-Shan Chen ¹ , Ying-Chieh Chen ^{*1} ¹ National Tsing-Hua University Chinese Taipei
S1-F-05	15:10-15:20	Trizonal, tissue-engineered meniscus microtissues for treatment of meniscal defects in a micropig partial meniscectomy model Sujin Noh ¹ , YONGJUN JIN ² , Dong Il Shin ³ , Hee-Woong Yun ⁴ , Hyeon Jae Kwon ³ , Do Yeon Kim ¹ , Do Young Park ^{*2} ¹ Department of Biomedical Sciences, Graduate School of Ajou University, ² Department of Orthopedic Surgery, School of Medicine, Ajou University, ³ Department of Molecular Science and Technology, Ajou University, ⁴ Cell Therapy Center, Ajou Medical Center, Republic of Korea
S1-F-06	15:20-15:30	Biomimetic semi-flexible hydrogel with reduced inflammation for bone defects Jae Seo Lee ¹ , Il Keun Kwon ^{*2} ¹ Department of Dentistry, Graduate School, Kyung Hee University, 26 Kyungheedaero, Dongdaemun-gu, Seoul 02447, ² Department of Dental Materials, School of Dentistry, Kyung Hee University, 26 Kyungheedaero, Dongdaemun-gu, Seoul 02447 Republic of Korea
S1-F-07	15:30-15:40	Fabrication of cell bead-laden 3D structure via oil-free microfluidic system for using thermoresponsive hydrogel Juyeon Kim ¹ , WonJin Kim ¹ , Hyeongjin Lee ¹ , JiUn Lee ¹ , SooJung Chae ¹ , Dongyun Kim ¹ , GeunHyung Kim ^{*1} ¹ Sungkyunkwan University Republic of Korea
S1-F-08	15:40-15:50	Spatiotemporal modulation of skeletal muscle regeneration with varying vasculature patterns in an in-bath bioprinted skeletal muscle tissue Seungyeun Cho ¹ , Myungji Kim ¹ , Uijung Yong ¹ , Donghwan Kim ¹ , Dong Gyu Hwang ¹ , Jinah Jang ^{*1} ¹ POSTECH, Republic of Korea
S1-F-09	15:50-16:00	Effect of chondroitin sulfate concentration and matrix stiffness on chondrogenic differentiation of mesenchymal stem cells Chengchong Ai ¹ , James Goh ^{*1} ¹ National University of Singapore

S2-F

Session Topic	SYIS	
Title	Biomaterials	
Date	October 5 (Wed)	Time 16:30-18:00
Room	Room 401	
Chair(s)	Hee Ho Park (Hanyang University, Republic of Korea) Yunji Lee (POSTECH(Pohang university of science and technology), Republic of Korea)	

S2-F-01	16:30-16:40	Decellularized tissue-derived adhesive hydrogel with enhanced mechanical property for tissue regeneration Yi Sun Choi ¹ , Jung Seung Lee ¹ , Mi Jeong Lee ¹ , JungHo Bae ¹ , Jong Seung Lee ¹ , Eun Je Jeon ¹ , Soohwan An ¹ , Min Suk Lee ² , Hee Seok Yang ² , Seung-Woo Cho ^{*1} ¹ Yonsei University, ² Dankook University
S2-F-02	16:40-16:50	The modification of terminal end of thermal sensitive Pluronic for enhancing nasal drug deliver to brain Tsung-Yun Wu ¹ , Yu-Shuan Chen ² , Hsieh-Chih Tsai ^{*1} ¹ National Taiwan University of Science and Technology, ² Hualien tzu chi hospital buddhist tzu chi medical foundation, Chinese Taipei
S2-F-03	16:50-17:00	Preparation of doxorubicin-liposomes loaded composite scaffolds of gelatin and gold nanoparticles for breast cancer therapy and breast tissue engineering Huajian Chen ¹ , Naoki Kawazoe ² , Guoping Chen ^{*1} ¹ Research Center for Functional Materials, National Institute for Materials Science; Sch. of Pure and Applied Science, University of Tsukuba, ² Research Center for Functional Materials, National Institute for Materials Science, Japan

S2-F-04	17:00-17:10	Delivery of a spheroids-incorporated human dermal fibroblast sheet increases angiogenesis and M2 polarization for wound healing Jiyu Hyun ¹ , Suk Ho Bhang* ¹ ¹ Sungkyunkwan University, Republic of Korea
S2-F-05	17:10-17:20	3D printed isosorbide-based polymer and gelatin methacrylate bilayer scaffold for osteochondral tissue engineering Fiona Verisqa* ¹ , Jonathan Knowles ¹ , Linh Nguyen ¹ , Hae-won Kim ³ ¹ Division of Biomaterials and Tissue Engineering, Eastman Dental Institute, University College London, Royal Free Hospital, Pond Street, London, NW3 2QG, UK, ² UCL, ³ Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Cheonan 31116, Republic of Korea
S2-F-06	17:20-17:30	3D-printed airway model as a tool for studying SARS-CoV-2 infection and antiviral therapeutics Yunji Lee ¹ , Myoung Kyu Lee ² , Dayoon Kang ¹ , Hwa-Rim Lee ¹ , Meehyein Kim ² , Sungjune Jung* ¹ ¹ POSTECH(Pohang university of science and technology), ² KRICT(Korea Research Institute of Chemical Technology), Republic of Korea
S2-F-07	17:30-17:40	Bioengineered mussel protein-based multi-layer dental implants for tooth-mimicking interface construction Jinyoung Yun ¹ , Hyung Joon Cha* ¹ ¹ POSTECH, Republic of Korea
S2-F-08	17:40-17:50	Fibroblast growth factor 2 enhances valvular interstitial cell growth on decellularised matrices Marcus Ground* ¹ , Jillian Cornish ² ¹ University of Otago, New Zealand, ² University of Auckland, New Zealand
S2-F-09	17:50-18:00	Cellulose nanofibers as a promising topical haemostatic agent Elmira Mohamed* ¹ , Takuya Tsuzuki ¹ , Lucy Coupland ¹ , David Nisbet ² ¹ Australian National University, ² The Graeme Clark Institute, The University of Melbourne, Australia

S3-F

Session Topic

SYIS

Title

Delivery systems

Date

October 6 (Thu)

Time

10:30-12:00

Room

Room 401

Chair(s)

 Hee-Gyeong Yi (Chonnam National University, Republic of Korea)
Pei Leng Tan (Nanyang Technological University, Singapore)

S3-F-01	10:30-10:40	Scalable delivery of highly proliferative co-cultured skin cells in 3D GelMA core-shell microspheres Pei Leng Tan ¹ , Lay Poh Tan* ¹ ¹ School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore
S3-F-02	10:40-10:50	Supramolecular injectable controlled peptide delivery hydrogels for diabetic wound healing Sang Hoon Jeong ¹ , Sei Kwang Hahn* ¹ ¹ Pohang University of Science and Technology, Republic of Korea
S3-F-03	10:50-11:00	Phlorotannin-incorporated nanofiber exhibits cytocompatibility and accelerates hyperglycaemic wound healing Shou Jin Phang ¹ , Mh Busra Fauzi ³ , Yun Ping Neo ² , Umah Rani Kuppusamy ¹ , Mee Lee Looi* ¹ ¹ Department of Biomedical Science, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, ² School of Biosciences, Faculty of Health and Medical Sciences, Taylor's University, 47500 Selangor, ³ Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur, Malaysia
S3-F-04	11:00-11:10	Type II collagen-specific regulatory T cell-inducing nanoparticle for osteoarthritis Hee Su Sohn ¹ , Jeong Won Choi ² , Joo Yeon Jhun ² , Sung Pil Kwon ¹ , Mungyo Jung ¹ , Sangmin Yong ¹ , Hyun Sik Na ² , Byung-Soo Kim* ¹ ¹ Seoul National University, Republic of Korea, ² The Catholic University of Korea, Republic of Korea
S3-F-05	11:10-11:20	Development of polymer therapeutics that selectively disrupts the cell membrane in the tumor microenvironment Kazuki Moroishi ¹ , Masahiko Nakamoto ¹ , Michiya Matsusaki* ¹ ¹ Osaka university, Japan
S3-F-06	11:20-11:30	Delivering micro-RNA (miRNA) via β-peptide derived biomaterial to treat ischemic stroke Yi-Kai Chen* ¹ , Mark Del Borgo ¹ , Bradley Broughton ¹ ¹ Department of Pharmacology, Monash University, Australia
S3-F-07	11:30-11:40	Dual ligand functionalized nanosystem for prolonged and enhanced inflammation targeting in dermatitis Kiyoon Min ¹ , Soyeon Yoo ¹ , Min Su Han ¹ , Giyoong Tae* ¹ ¹ Gwangju Institute of Science and Technology

S3-F-08	11:40-11:50	<p>Engineering self-assembling peptide scaffolds for controlled delivery of viral vector serotypes Shiva Soltani Dehnavi¹, Arianna Cembran⁷, Leszek Lisowski⁵, Alan Harvey⁶, Clare Parish⁴, Richard Williams³, David Nisbet²</p> <p>¹ACRF Department of Cancer Biology and Therapeutics, The John Curtin School of Medical Research, ANU College of Health & Medicine, Australia. College of Engineering and Computer Science, School of Engineering, ²ACRF Department of Cancer Biology and Therapeutics, The John Curtin School of Medical Research, ANU College of Health & Medicine, Australia. Research School of Chemistry, ANU College of Science, Australia. The Graeme Clark Institute, The University of Melbourne, Melbourne, Australia. Department of Biomedical Engineering, Faculty of Engineering and Information Technology, The University of Melbourne, Melbourne, Australia. Melbourne Medical School, Faculty of Medicine, Dentistry and Health Science, The University of Melbourne, Melbourne, Australia., ³IMPACT, School of Medicine, Deakin University, Waurn Ponds, VIC 3216, ⁴The Florey Institute of Neuroscience and Mental Health, The University of Melbourne, Parkville, Melbourne, VIC 3010, ⁵Translational Vectorology Unit, Childreanu 2019s Medical Research Institute, Faculty of Medicine and Health, The University of Sydney, Westmead, NSW 2145, Australia. Vector and Genome Engineering Facility, Childreanu 2019s Medical Research Institute, Faculty of Medicine and Health, The University of Sydney, Westmead, NSW 2145, Australia. Military Institute of Medicine, Laboratory of Molecular Oncology and Innovative Therapies, 04-141 Warsaw, Poland., ⁶School of Human Sciences, The University of Western Australia, and Perron Institute for Neurological and Translational Science, Perth, WA 6009, Australia, ⁷College of Engineering and Computer Science, School of Engineering, Australia</p>
S3-F-09	11:50-12:00	<p>Sustained local release of PPAR-gamma agonist from 3D fabricated biodegradable nerve guide conduits Se Hun Chung¹, Susan Barker², Duncan Craig¹, Jie Huang¹</p> <p>¹University College London, ²Universities of Greenwich and Kent, United Kingdom</p>

S4-F	Session Topic	SYIS
	Title	Stem cell engineering
	Date	October 6 (Thu)
	Time	13:00-14:30
	Room	Room 401
Chair(s)	Jung Seung Lee (Sungkyunkwan University, Republic of Korea) Hyun Su Park (Sungkyunkwan University, Republic of Korea)	

S4-F-01	13:00-13:10	<p>Enzyme-controlled, nutritive hydrogel for mesenchymal stromal cell survival and paracrine functions Pauline Wosinski¹, Cyprien Denoed¹, Guotian Luo¹, Julie Boisselier², Adrien Moya¹, Stephane Marinesco³, Anne Meiller³, Adeline Gand², Delphine Logeart-Avramoglou¹, Emmanuel Pauthe², Esther Potier¹, Herve Petite¹</p> <p>¹University Paris Cite, CNRS, INSERM ENVA, B30A, F-75010 Paris, ²Equipe de Recherche sur les Relations Matrice Extracellulaire Cellules (ERRMECe), Institut des Matériaux, Université de Cergy-Pontoise, 95302 Cergy-Pontoise Cedex, ³Lyon Neuroscience Research Center, AniRA-Neurochem Technological Platform, Team TIGER, INSERM U1028, CNRS UMR5292, 69675 Bron Cedex, France</p>
S4-F-02	13:10-13:20	<p>Three-dimensional hydrogel with biophysical modulation regulates cellular reprogramming into induced pluripotent stem cell Deogil Kim², Byung-Hyun Cha³, Jinsung Ahn¹, Yoshie Arai¹, Min Ju Lee¹, Soo-Hong Lee¹</p> <p>¹Dongguk University, ²CHA University, ³Kangwon University, Republic of Korea</p>
S4-F-03	13:20-13:30	<p>Single-cell multiomic profiling identifies novel regulators of stem cell derived β-cell differentiation and maturation Punn Augsomworawat¹, Jeffrey Millman²</p> <p>¹Washington University in St. Louis, ²Washington University School of Medicine, USA</p>
S4-F-04	13:30-13:40	<p>Priming of FGF2/HGF combination restores the impaired osteogenic differentiation of adipose-derived stem cells Jeong Seop Park¹, Hyun Sook Hong²</p> <p>¹Kyunghee University, ²Kyunghee University East-West Medical Research Institute</p>
S4-F-05	13:40-13:50	<p>Exosomes secreted from fetal cartilage-derived stem cells promote skeletal muscle regeneration via the miR-145a DONG IL SHIN¹, YONGJUN JIN³, Sujin Noh², Jinho Park¹, NGOCTRINH TRAN¹, Byoung-Hyun Min¹</p> <p>¹Department of Molecular Science and Technology, Ajou University, Suwon, ²Department of Biomedical Sciences, School of Medicine, Ajou University, Suwon, Korea, ³Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, Korea, Republic of Korea</p>
S4-F-06	13:50-14:00	<p>Manipulation of inherent niches in 3D MSC spheroids improves therapeutic potential Kee-Chin Sia¹, Chieh-Cheng Huang¹</p> <p>¹Institute of Biomedical Engineering, National Tsing Hua University, Chinese Taipei</p>
S4-F-07	14:00-14:10	<p>Phototoxicity-free blue light for enhancing therapeutic angiogenic efficacy of stem cells Eun cheol Lee¹, Suk Ho Bhang¹, Sung Won Kim¹, Yu Jin Kim¹, Gwang Bum Im¹, Yeoung Hwan Kim¹, Gun Jae Jeong², Sung Min Cho¹, Hae Shin Lee¹</p> <p>¹Sungkyunkwan University, Republic of Korea, ²Sungkyunkwan University, USA</p>
S4-F-08	14:10-14:20	<p>Engineered 3D biomimetic skeletal muscle construct using induced myogenic progenitors that can self-renew and differentiate Inseon Kim¹, Seunghun S. Lee², Stephen J. Ferguson², Ori Bar-Nur¹</p> <p>¹Laboratory of Regenerative and Movement Biology, Department Health Sciences and Technology, ETH Zurich, ²Institute for Biomechanics, Department of Health Sciences and Technology, ETH Zurich, Switzerland</p>
S4-F-09	14:20-14:30	<p>Self-organized insulin-producing beta cells differentiated from human omentum-derived stem cell Ji hoon Jeong¹, Ki Nam Park⁴, KyungMu Noh¹, Yunhye Kim¹, Sung Sik Hur¹, Jae Hong Park³, Sang-Heon Kim², Yongsung Hwang¹</p> <p>¹Soonchunhyang Institute of Medi-bio Science (SIMS), ²Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Seoul, ³Department of Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University Cheonan Hospital, Cheonan, ⁴Department of Otorhinolaryngology-Head and Neck Surgery Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Bucheon, Republic of Korea</p>

S5-F

Session Topic	SYIS	
Title	Organ-mimetic platforms	
Date	October 6 (Thu)	Time 14:30-16:00
Room	Room 401	
Chair(s)	Tae-Eun Park (UNIST, Republic of Korea) Minjeong Jang (KIST, Republic of Korea)	

S5-F-01	14:30-14:40	In vitro modeling of atherosclerosis in human blood vessel organoids Dasom Kong ¹ , Jungju Choi ¹ , Kyung-Sun Kang* ¹ ¹ Seoul National University
S5-F-02	14:40-14:50	Integrating microwell structure and direct oxygenation to enhance functional liver organoid from hiPSCs-derived CPM+ liver progenitor cells Tia Utami * ¹ , Fumiya Tokito ² , Mathieu Danoy ² , Taketomo Kido ³ , Masaki Nishikawa ² , Atsushi Miyajima ³ , Yasuyuki Sakai ¹ ¹ Department of Bioengineering, Graduate School of Engineering, The University of Tokyo, ² Department of Chemical System Engineering, Graduate School of Engineering, The University of Tokyo, ³ Laboratory of Stem Cell Therapy, Institute for Quantitative Biosciences, The University of Tokyo, Japan
S5-F-03	14:50-15:00	Constructing a human liver tissue model that mimics the liver sinusoid Shiori Tamura * ¹ , Kodai Tsukamoto ¹ , Yoichi Fujiyama ² , Yoh-ichi Tagawa ¹ ¹ School of Life Science and Technology, Tokyo Institute of Technology, ² Shimadzu Corporation, Japan
S5-F-04	15:00-15:10	Tissue-derived extracellular matrix hydrogel for gastrointestinal organoid culture Sungjin Min ¹ , Suran Kim ¹ , Yi Sun Choi ¹ , Sung-Hyun Jo ³ , Jae Hun Jung ² , Kyusun Han ² , Jin Kim ¹ , Soohwan An ¹ , Hyebin Joo ¹ , Yong Woo Ji ² , Yun-Gon Kim ³ , Seung-Woo Cho* ¹ ¹ Yonsei University, Republic of Korea, ² Yonsei University College of Medicine, Republic of Korea, ³ Soongsil University, Republic of Korea
S5-F-05	15:10-15:20	A novel large-scale production method for homogeneous cardiac organoids for regenerative therapy and drug discovery Taijun Moriwaki ¹ , Shugo Tohyama* ¹ ¹ Keio University, Japan
S5-F-06	15:20-15:30	Bimatoprost ameliorates colistin induced nephrotoxicity Lina Joo ² , Hye Yun Jeong ³ , JooHyun Jee ¹ , Bae Dong Hyuck ¹ , Woo Hee Choi ¹ , Jongman Yoo* ¹ ¹ Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea., ORGANOIDSCIENCES Co., Ltd., 406, 560, Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea, CHA Organoid Research Center, CHA University, Seongnam, Republic of Korea, ² Department of Microbiology, CHA University School of Medicine, Seongnam, Republic of Korea, ³ Department of Nephrology, Department of Internal Medicine, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Republic of Korea
S5-F-07	15:30-15:40	Screening niche factors favoring hair lineage differentiation using a multiphoton microfabrication and micropatterning (MMM) technology-based cell niche factor biochip (CNFB) Wanjing Ou ¹ , Xinna Wang ¹ , Barbara Pui Chan* ¹ ¹ Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong Special Administrative Region, China
S5-F-08	15:40-15:50	Accurate drug screening by design of antifouling channel wall microfluidic platform Tae Young Kim ³ , Jeong-Won Choi ² , Kijun Park ¹ , Tae-Eun Park ² , Jungmok Seo* ¹ ¹ School of Electrical and Electronic Engineering, Yonsei University, ² School of Life Sciences, Ulsan National Institute of Science and Technology, ³ Yonsei, Republic of Korea
S5-F-09	15:50-16:00	Development of aging-induced neurovasculature-on-a-chip to study the aging-mediated neurodegenerative disease Minjeong Jang ¹ , Hong Nam Kim* ¹ ¹ KIST, Republic of Korea

S6-F

Session Topic	SYIS	
Title	Mentoring session	
Date	October 6 (Thu)	Time 16:30-18:00
Room	Room 401	
Chair(s)	Yoonhee Jin (Yonsei University College of Medicine, Republic of Korea) Mikyung Shin (Sungkyunkwan University, Republic of Korea)	

S6-F-01	16:30-16:45 Mentor	Life and Research Jen Ming Yang Chang Gung University, Chinese Taipei
S6-F-02	16:45-17:00 Mentor	Career Morphogenesis: Adapting to different microenvironments to create fate choice options Justin Cooper-White The University of Queensland, Australia

S6-F-03	17:00- 17:15 Mentor	Developing Essential Skills for a Successful Career James J. Yoo Wake Forest Institute for Regenerative Medicine, Winston Salem, North Carolina, U.S.A., USA
S6-F-04	17:15- 17:30 Mentor	Career Success - Illusion or Reality? Abhay Pandit CÚRAM, University of Galway, Ireland
S6-F-05	17:30- 17:45 Mentor	My enjoying science Chong-Su Cho Seoul National University, Republic of Korea

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

General Poster Sessions

Code	Topic
P01	Exosomes
P02	Organoids
P03	Stem Cells
P04	Biomaterials
P05	Biofabrication
P06	Tissue Engineering
P07	Enabling Technologies
P08	Manufacturing and Bioprocess
P09	Therapeutic Technologies (Preclinical & Clinical Studies)
P10	Others

General Poster Sessions

Part 1

October 5-6

P01 Exosomes

P01-001

Extracellular vesicles derived from fibroblasts promote wound healing by optimizing fibroblast and endothelial cellular functions

EunJung Oh¹, Prakash Gangadaran², Hyun Mi Kim¹, Su In Kwak², Ji Min Oh¹, Myeong Jae Kang¹, Kang Young Choi¹, Byeong-Cheol Ahn¹, Ho Yun Chung¹

¹Kyungpook National University Hospital, Republic of Korea, ²Kyungpook National University, Republic of Korea

P01-002

Which medium is most suitable for the production of extracellular vesicles for therapeutics?

Ji Yong Choi¹, Da Eun Jeong¹, Joo Youn Lee^{*1}

¹Xcell Therapeutics Inc., Republic of Korea

P01-003

Anti-inflammatory and immune-modulation effects of exosomes derived from human fetal cartilage progenitor cells (hFCPCs) *in vitro*

JiYOUNG LEE¹, Sang-Hyug Park³, So-Ra Park¹, Byoung-Hyun Min², Byung Hyune Choi¹

¹Inha university, ²Ajou University, ³Pukyong National University, Republic of Korea

P01-004

In vivo migration of mesenchymal stem cells to burn injury sites and their therapeutic effects in a living mouse model

Suin Kwak², Eun Jung Oh¹, Hyun Mi Kim¹, Ho Yun Chung^{*1}

¹Department of Plastic and Reconstructive Surgery, School of Medicine, Kyungpook National University, Daegu, ²KyungPook National University, Republic of Korea

P01-005

Shear stress-driven exosome production and transcriptomic analysis in 3D cultured osteocytic cells

Eui Kyun Park^{*1}, Su jeong Lee¹, Jiwon Lim¹

¹Kyungpook National University, Republic of Korea

P01-006

Effect of cytokine stimulation on human mesenchymal stem/stromal cell responses to exosome secretion

Chaiyong Koaykul¹, Vajara Wilairatana¹

¹Faculty of Medicine, Chulalongkorn University, Thailand

P01-007

Exosome derived from human adipose stem cells (ASC) exosome exert therapeutic effect on inhalation injury with caused by burns in vitro

You-rin Kim¹, Ji Hye Park¹, Ji-Seon Lee¹, Dogeon Yoon¹, Wook Chun^{*1}

¹Burn Institute, Hallym University, Republic of Korea

October 5-6

P02 Organoids

P02-001

Bioengineered airway organoids using a decellularized extracellular matrix for augmented regeneration of tracheal injuries

Si Hyeon Ju¹, Min Beom Kim¹, Yun Kee Jo^{*1}

¹Department of Biomedical Convergence, School of Convergence, Kyungpook National University, Republic of Korea

P02-002

Mouse liver organoids culture under in vivo-comparable steady-state flow condition support hepatic functions in mice with acute liver failure

Da Jung Jung¹, Gi Seok Jeong^{*1}

¹Asan Medical Center, Republic of Korea

P02-003

Generation of a hair follicle-like organoid model comprising human immortalized cell lines

Hyun Woo Joo¹, Min Kyu Kim¹, Soon Sun Bak¹, Young Kwan Sung^{*1}

¹Kyungpook National University, Republic of Korea

P02-004

Bioengineered intestinal organoids using a tissue-adhesive biopolymeric hydrogel for reconstruction of intestinal injuries

Min Beom Kim¹, Yun Kee Jo^{*1}

¹Department of Biomedical Convergence, School of Convergence, Kyungpook National University, Republic of Korea

P02-005

High-throughput endometrial organoids screening platform using decellularized extracellular matrix microgels

Myeong Jae Baek¹, Min Beom Kim¹, Yun Kee Jo^{*1}

¹Department of Biomedical Convergence, School of Convergence, Kyungpook National University, Republic of Korea

P02-006

Effect of microplastics on blood-brain barrier (BBB)

YEONG SEON CHO¹, Jonghoon Choi², HongNam Kim^{*1}

¹KIST, ²School of Integrative Engineering, Chung-Ang University, Republic of Korea

P02-007

Modeling myocardial infarction using multi-cellular cardiac organoids from hiPSCs

Myeongjin Song¹, Hanbyeol Lee¹, Jeong Suk Im¹, Da Bin Choi¹, Sujung Lee¹, Dong-Hun Woo^{*1}

¹Department of Commercializing Stem Cell Technology, NEXEL Co., Ltd, Republic of Korea

October 5-6

P03 Stem Cells

P03-001

In vivo oxygen and temperature for ideal culture condition of human nasal inferior turbinate derived stem cells in human nose

SeHwan Hwang^{*1}

¹Catholic university of Korea, Republic of Korea

P03-002

Optimising somatic cell reprogramming outcomes through mechano-modulation

Justin Cooper-White^{*1}, Mahfuz Chowdhury¹, Samuel Zimmerman³, Jessica Mar¹, Christian Nefgzer¹, Jose Polo⁴, Andrew Laslett², Ernst Wolvetang¹

¹The University of Queensland, Australia, ²CSIRO, Australia, ³Einstein College of Medicine, ⁴Monash University, Australia

P03-003

Dormant state of quiescent neural stem cells links Shank3 mutation to autism development

JONGPIL KIM¹¹*DONGGUK UNIV, Republic of Korea***P03-004****Metabolic switch in human bone marrow stromal/stem cells and discovery of NR2F1 gene that can promote cell survival and osteogenic differentiation under a glucose-deprived microenvironment****Eugene Lee¹**, Seo-Young Park¹, So-Hyun Park¹, Ji-Yun Ko¹, Gun-Il Im²¹*Dongguk university*, ²*Dongguk University Ilsan Hospital, Republic of Korea***P03-005****Discovery of GSTT1 gene that can promote osteogenic differentiation of adipose stem cells****Eugene Lee¹**, Jae-Yeon Moon¹, Sang-Jun Han¹, Ji-Yun Ko¹, Gun-Il Im²¹*Research Institute for Integrative Regenerative Biomedical Engineering, Dongguk University*, ²*Department of Orthopaedics, Dongguk University Ilsan Hospital, Republic of Korea***P03-006****Application of skeletal muscle cell differentiated from human tonsil-derived stem cells for Duchenne muscular dystrophy****Saeyoung Park¹**, Soyeon Jeong¹, Yu Hwa Nam^{1,2}, Yoonji Yum¹, Sung-Chul Jung^{*1,2}¹*Department of Biochemistry, College of Medicine, Ewha Womans University, Seoul 07804*, ²*Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul 07804, Republic of Korea***P03-007****Corneal regeneration by autologous limbal stem cells cultured on siloxane-hydrogel contact lens in a limbal stem cell deficient rabbit model****Rohaina Che Man²**, Ooi Yong Lin¹, Safinaz Mohd Khialdin¹, Aida Zairani Mohd Zahidin³, Ng Min Hwei⁴, Nordashima Abd Shukor¹, Maaatamarulain Mustangin¹, Wan Haslina Wan Abdul Halim^{*1}¹*Department of Ophthalmology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia.*, ²*Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia.*, ³*Gleneagles Hospital Kuala Lumpur, Kuala Lumpur, Malaysia.*, ⁴*Centre for Tissue Engineering & Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia***P03-008****Hypo-immune retinal pigment epithelial cells for retinal regeneration****Ji Yeon Kim¹**, Su Mi Kim¹, Young Hoon Sung^{1,2}, Eunju Kang³, Joo Yong Lee^{4,5}, Changmo Hwang^{*1,2}¹*Department of Convergence Medicine, Asan Medical Center*, ²*Department of Convergence Medicine, University of Ulsan College of Medicine*, ³*Department of Biomedical Science, Cha University*, ⁴*Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Seoul*, ⁵*Bio-Medical Institute of Technology, University of Ulsan College of Medicine, Seoul, Republic of Korea***P03-009****Working cell bank preparation of retinal pigment epithelial cells during differentiation from iPSC****Sang Hee Kwak¹**, Min Hee Kim¹, Su Mi Kim¹, Ji Yeon Kim¹, Chang Mo Hwang^{*1,2}¹*Department of Convergence Medicine, Asan Medical Center*, ²*Department of Convergence Medicine, University of Ulsan College of Medicine, Republic of Korea***P03-010****Study on hepatic progenitor cell activation and liver regeneration through the interaction of mesenchymal stem cells and liver sinusoidal endothelial cells****Su Jung Park¹**, JinSuk Lee¹, Mi Ra Lee¹, Yu Jin Yi¹, Moon Young Kim²¹*Yonsei university wonju college of medicine*, ²*Wonju Severance Christian Hospital, Department of Internal Medicine, Division of Gastroenterology and Hepatology, Republic of Korea***P03-011****Silencing SIRT5 induces the senescence of UCB-MSCs exposed to TNF- α by reduction of fatty acid β -oxidation and superoxide dismutase 2 activity****Young Hyun Jung¹**, Chang Woo Chae¹, Gee Euhn Choi¹, Han Seung Chang¹, Ho Jae Han^{*1}¹*Department of Veterinary Physiology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Republic of Korea***P03-012****Effect of mESCs transplanted into the cochlea of animals with acute and chronic neurological hearing loss****So-Young Chang¹**, Jae Yun Jung¹, Ji Eun Choi¹, Hee-Won Jeong¹, Eunjeong Kim¹, Min Young Lee^{*1}¹*Dankook University, Republic of Korea***P03-013****Basic fibroblast growth factor and forskolin induce cholinergic neuronal differentiation of tonsil-derived mesenchymal stem cells****Se-Young (Steve) Oh¹**, Ji-Hye Song², Inho Jo¹, Sangmee Ahn Jo^{*2}¹*Department of Molecular Medicine & Graduate Program in System Health Science and Engineering, College of Medicine, Ewha Womans University*, ²*Department of Nanobiomedical Science, BK21 PLUS NBM Global Research Center for Regenerative Medicine & Department of Pharmacology, College of Pharmacy, Dankook University, Republic of Korea***P03-014****Transcriptomic analysis of human tonsil-derived mesenchymal stem cells exposed to far-infrared irradiation****Young Min Choi¹**, Se-Young Oh¹, Jin Hee Park¹, Ji-Young Hwang³, Sung-Chul Jung⁴, Inho Jo^{*2}¹*Department of Molecular Medicine, College of Medicine, Ewha Womans University, Seoul 07804*; *Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul 03760*, ²*Department of Molecular Medicine, College of Medicine, Ewha Womans University, Seoul 07804*; *Korean Fund for Regenerative Medicine, Seoul 04637*, ³*Korea Carbon Industry Promotion Agency (KCARBON), Jeonju-si, Jeollabuk-do 54853*, ⁴*Department of Biochemistry, College of Medicine, Ewha Womans University, Seoul 07804*; *Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul 03760, Republic of Korea***P03-024****UCHL1 plays a key role for the trans-differentiation of auditory supporting cells into hair cells in the cochlea****Yun-Hoon Chung¹**, Young Sun Kim¹, Yeon Ju Kim¹, Seong Jun Choi³, Siung Sung², Dong Ha Lee², Sivasubramanian Ramani¹, Jungho Ha¹, Jeong Hun Jang¹, Si Yeon Seon², Hae Rim Lee², Jeong Min Lee³¹*Ajou University School of Medicine*, ²*Ajou University Graduate School of Medicine*, ³*Soonchunhyang University College of Medicine, Republic of Korea***P03-032****Evaluation of the effects of *Centipeda minima* (L.) on cellular viability, osteogenic differentiation and mineralization of human bone marrow-derived stem cells****Hyunjin Lee¹**, Md. Salah Uddin³, Jun-Beom Park^{*2}

¹The Catholic University of Korea, Republic of Korea, ²Department of Periodontics, Seoul St Mary's Hospital, College of Medicine, The Catholic University of Korea Republic of Korea, ³Ethnobotanical Database of Bangladesh, Tejgaon Dhaka, 1208, Bangladesh, Republic of Korea

October 5-6 P04 Biomaterials

P04-001

Development of high elastic biodegradable stent based on PCL copolymer with shape memory effect

Ga Hee Kim¹, Seung Sang Hwang², Hee Seok Yang³, Kyu Seok Kim⁴, Jun Sik Son^{*1}

¹Korea Textile Development Institute, Republic of Korea, ²Korea Institute of Science and Technology, Republic of Korea, ³Dankook university, Republic of Korea, ⁴M.I. Tech Co., Ltd., Republic of Korea

P04-002

Silk sericin increases BMP-2 expression in macrophage

Seong-Gon Kim¹, Yei-Jin Kang¹, HaeYong Kweon², Ji-Hyeon Oh¹

¹Gangneung-Wonju National University, Republic of Korea, ²National Academy of Agricultural Science, Republic of Korea

P04-003

The administration of peptides from silk sericin to the macrophage

Seong-Gon Kim¹, Ji-Hyeon Oh¹, Yei-Jin Kang¹, HaeYong Kweon²

¹Gangneung-Wonju National University, Republic of Korea, ²National Academy of Agricultural Science, Republic of Korea

P04-004

Lotus-inspired multifunctional antifouling janus nanofibrous membrane for prevention of postsurgical tissue adhesion

Yu Ri Jeon¹, Yun Kee Jo¹

¹Kyungpook National University, Republic of Korea

P04-005

Evaluation of bone formation of duck-beak particles by heat treatment procedure in a rat model

Seok Jin Jang¹, Seong Soo Kang², Gonhyung Kim¹, Seok Hwa Choi¹

¹Department of Veterinary Surgery, Chungbuk National University, Republic of Korea, ²Department of Veterinary Surgery, Chonnam National University, Republic of Korea

P04-006

Vertical osteogenesis using a 3D printed nylon cap in a rat model

Seok Jin Jang¹, Seong Soo Kang², Gonhyung Kim¹, Seok Hwa Choi¹

¹Department of Veterinary Surgery, Chungbuk National University, Republic of Korea, ²Department of Veterinary Surgery, Chonnam National University, Republic of Korea

P04-007

Properties of biodegradable fiber stents consist of polydioxanone and polycaprolactone for companion animal application

Soon Ho Jang¹, Ga Hee Kim¹, Kyu Seok Kim², Jun Sik Son^{*1}

¹Korea Textile Development Institute, Republic of Korea, ²M.I. Tech, Co. Ltd, Republic of Korea

P04-008

Biodegradable vascular scaffold with modified magnesium hydroxide coating for improved re-endothelialization and anti-inflammation

Duck Hyun Song¹, Seung-Woon Baek¹, Yun Heo¹, Ah Reum Lee¹, Dong Keun Han¹

¹CHA University, Republic of Korea

P04-009

Improvement of mechanical properties and anti-inflammatory effect of poly(L-lactic acid) by formation of stereocomplex structure and surface-modified magnesium hydroxide

Jun Hyuk Kim¹, Seung Woon Baek¹, Duck Hyun Song¹, Chun Gwon Park², Dong Keun Han^{*1}

¹CHA University, Republic of Korea, ²Sungkyunkwan University, Republic of Korea

P04-010

Gelatin based edible 3D-porous scaffolds for culture meat applications

Madhusudana Kummara¹, Soon Mo Choi¹, Sunmi Zo², Suneetha Maduru², Sung Soo Han^{*1}

¹School of Chemical Engineering and Research Institute of cell culture, Yeungnam University, Gyeongsan-38541, Republic of Korea, ²School of Chemical Engineering, Yeungnam University, Gyeongsan-38541, Republic of Korea

P04-011

Xeno- and serum-free manufacturing of a hypoxic culture enhanced mesenchymal stem cell (MSC)-derived extracellular matrix (ECM)-based biomaterial for therapeutic angiogenesis

Kwok Keung Lit¹, Cheuk Kwan Li², Sui Ki Chiu², Anna Blocki¹

¹Institute for Tissue Engineering and Regenerative Medicine, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, Hong Kong Special Administrative Region of China, Hong Kong, ²School of Biomedical Sciences, Faculty of Medicine, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, Hong Kong Special Administrative Region of China, Hong Kong

P04-012

Heat-confined tumor-docking reversible thermogel potentiates systemic antitumor immune response during near-infrared triggered photothermal therapy in triple-negative breast cancer

ADITYANARAYAN MOHAPATRA¹, In-Kyu Park^{*1}

¹Chonnam National University, South Korea, Republic of Korea

P04-013

Physicochemical properties of dexamethasone-loaded polydioxanone monofilament fiber with different draw ratio

Myoungjin Jang¹, Ga Hee Kim¹, Seung Won Yang², Yoon Ki Joung², Chang-il Kwon⁴, Kyu Seok Kim³, Jun Sik Son^{*1}

¹Korea Textile Development Institute, Republic of Korea, ²Korea Institute of Science and Technology, Republic of Korea, ³M.I. Tech, Co. Ltd., Republic of Korea, ⁴CHA University School of Medicine, Republic of Korea

P04-014

Fabrication and mechanical compatibility of beta-tricalcium phosphate/alumina/polycaprolactone scaffolds for bone tissue regeneration

Jin Myoung Yoo¹, Hyeol Lee¹, Nandha Kumar Ponnusamy², Seung Yun Nam^{*2}

¹Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Republic of Korea, ²Major of Biomedical Engineering, Division of Smart Healthcare, College of Information Technology and Convergence, Pukyong National University, Republic of Korea

P04-015

Hyaluronan-coated Prussian blue nanoparticles mitigate oxidative stress and inflammation during LPS-induced peritonitis

AYESKANTA MOHANTY¹, IN-KYU PARK^{*1}

¹CHONNAM NATIONAL UNIVERSITY, Republic of Korea

P04-016

Inflammation-sensing catalase-mimicking nanozymes alleviate acute kidney injury via reversing local oxidative stress

Arathy Vasukutty¹, In-Kyu Park^{*1}

¹Chonnam National University, Republic of Korea

P04-017

Tumor microenvironment-regulating immunosenescence-independent nanostimulant synergizing with near-infrared light irradiation for antitumor immunity

Amal Babu¹, In-Kyu Park¹

¹Chonnam National University, Republic of Korea

P04-018

BMP-2 immobilized lubricated orthopedic implant coating suppresses bacterial infection and improves osseointegration

Jae Park¹, Yeontaek Lee¹, Kijun Park¹, Jungmok Seo¹

¹Yonsei University, Republic of Korea

P04-019

Advanced fabrication of the vascular structure using triple-coaxial bioprinting

Jin Myoung Yoo¹, Seung Yun Nam²

¹Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Republic of Korea, ²Major of Biomedical Engineering, Division of Smart Healthcare, College of Information Technology and Convergence, Pukyong National University, Republic of Korea

P04-020

Electrochemical identification of naive and primed PSCs based on cellular metabolism

KYEONG-MO KOO¹, Young-Hyun Go², Hyuk-Jin Cha², Tae-Hyung Kim¹

¹School of Integrative Engineering, Chung-Ang University, Seoul 06974, Republic of Korea, ²College of Pharmacy, Seoul National University, Seoul 08826, Republic of Korea

P04-021

A new approach to characterize metastatic tendency of cancer cells

Kyeongwon Chung¹

¹Kyungpook National University, Republic of Korea

P04-022

Evaluation of cartilage regeneration efficacy of recombinant human transforming growth factor-beta 3 (rhTGF-beta3) in rabbit knee model

Pilyun Kim¹, Seok Beom Song¹, Mi Young Ryu¹, Baek Hyun Kim¹, Hyun Jung Park¹, Seung Hyo Go¹

¹Research Center, CGBIO Co., Ltd., Republic of Korea

P04-023

Programmed 'triple-mode' anti-tumor therapy: Improving peritoneal retention, tumor penetration and activatable drug release properties for effective inhibition of peritoneal carcinomatosis

VEENA VIJAYAN¹, In-Kyu Park¹

¹Chonnam National University, Republic of Korea

P04-024

Complex coacervate as a localized drug delivery and adhesive coating for wound healing patches

Young Kim¹, Byulhana Kim³, Yoonho Lee², Youngmee Jung⁴, Kangwon Lee², Justin J Chung¹

¹Seoul National University, Republic of Korea, ²Seoul National University, Republic of Korea, ³Yonsei University, ⁴Korea Institute of Science and Technology (KIST), Republic of Korea

P04-025

Reactive oxygen species suppressive kraft lignin-gelatin based antioxidant hydrogels for chronic wound repair

Byulhana Kim¹, Young Kim², Yoonho Lee², Youngmee Jung⁴, Won-Gun Koh¹, Justin J Chung³

¹Department of Chemical and Biomolecular Engineering, College of Engineering, Yonsei University, Republic of Korea, ²Transdisciplinary Department of Medicine and Advanced Technology, Seoul National University Hospital, Republic of Korea, ³College of Medicine, Seoul National University,

Republic of Korea, ⁴Biomedical Research Division, Korea Institute of Science and Technology (KIST), Republic of Korea

P04-026

BORON-doxorubicin-chitosan scaffolds as dual functional carriers with antitumor efficacy and bone regeneration ability

Luka Domjak¹, Karla Ostojic², Marin Kovacic¹, Inga Urlic², Anamarija Rogina¹

¹University of Zagreb Faculty of Chemical Engineering and Technology Croatia, ²University of Zagreb Faculty of Science, Croatia

P04-027

Functionalization, preparation and use of stem cell-laden bio-based photo-clickable hydrogels for spinal cord injury treatment

Paula Nunes de Oliveira¹, Jiahui Chen², Vaibavi Srirangam Ramanujam¹, Kieran Lau², Ju Wei², Shi Yan Ng⁵, Alexandra Montembault³, Sing Yian Chew⁴, Laurent David³

¹CNRS@CREATE Ltd, CREATE Tower, #08-01, 1 Create way, Singapore 138602 / School of Chemical and Biomedical Engineering - Nanyang Technological University, 62 Nanyang Drive, Singapore, 637459, Singapore, ²School of Chemical and Biomedical Engineering - Nanyang Technological University, 62 Nanyang Drive, Singapore, 637459, Singapore, ³Universite Claude Bernard, INSA de Lyon, Universite Jean Monet, CNRS, UMR 5223, 15 bd A. Latarjet 69622 Villeurbanne Cedex France/CNRS@CREATE Ltd, CREATE Tower, #08-01, 1 Create way, Singapore 138602, Singapore, ⁴School of Chemical and Biomedical Engineering - Nanyang Technological University, 62 Nanyang Drive, Singapore, 637459 / Lee Kong Chian School of Medicine, Nanyang Technological University, 11 Mandalay Road Singapore 308232 / School of Materials Science and Engineering, 50 Nanyang Avenue Singapore 639798, Singapore, ⁵Institute of Cell and Molecular Biology, 61 Biopolis Drive, Singapore 138673, Singapore

P04-028

Synergetic effect of dual oxygen and hydrogen peroxide release on enhancing the osteogenic and antibacterial properties of injectable hydrogels

Dong Hwan Oh¹, Phuong Le Thi¹, Dieu Linh Tran¹, Simin Lee¹, Ki Dong Park¹

¹Department of Molecular Science and Technology, Ajou University, Suwon 16499, Republic of Korea

P04-029

Decellularized bovine pericardial patch loaded with stem cells enhance the mechanical strength and biological healing of chronic retracted rotator cuff tear in a rat model

JAE HEE CHOI¹, Seungcheol Kang², In Kyong Shim¹, Euisup Lee², Yu Na Lee¹, Kyoung Hwan Koh²

¹Asan Institute for Life Sciences, Asan Medical Center, ²Department of Orthopaedic Surgery, Asan Medical Center, Republic of Korea

P04-030

Engineering of islets with chitosan microspheres and on-demand loading of heparin for preventing IBMIR in islet transplantation

Shrestha Manju¹, Tiej Tien Nguyen², Nguyen Thi Linh¹, Jee-Heon Jeong¹

¹School of Medicine, Sungkyunkwan University, 2066, Seobu-ro, Jangan-gu, Suwon-si, Gyeonggi-do, ²College of Pharmacy, Keimyung University, 42601, Daegu, Republic of Korea

P04-031

EGCG-embedded hybrid gelatin injectable hydrogel a provisional bio-template for future application: *In vitro* evaluation

Zawani Mazlan¹, Manira Maarof¹, Sarani Zakaria³, Joao Mano², Fauzi Mh Busra¹

¹Centre for Tissue Engineering & Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur 56000, Malaysia, ²Department of Chemistry, CICECO - Aveiro Institute of

Materials, University of Aveiro, Campus Universitu00e1rio de Santiago, 3810-193, Aveiro, Portugal., Malaysia, ³School of Applied Physics, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

P04-032**Engineering of biocompatible hybrid gelatin-PVA bioink for potential chronic wound treatment**

Syafira Masri¹, Manira Maarof¹, Fatih Duman², Mh Busra Mohd Fauzi¹

¹Centre for Tissue Engineering Centre and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Cheras, Kuala Lumpur 56000, Malaysia, ²Department of Biology, Faculty of Science, University of Erciyes, 38039, Turkey, Malaysia

P04-033**Alginate and gelatin-based scaffolds for the manufacture of *in-vitro* reconstructed meat**

ANKUR SOOD¹, ANUJ KUMAR¹, RITU SINGHMAR¹, SO YEON WON¹, HYEON JIN KIM¹, SUNG SOO HAN¹

¹Yeungnam University, Republic of Korea

P04-034**Morphological control of gold nanoparticles to enhances stability of localized surface plasmon resonance signals**

Joon-Ha Park¹, Yeon-Woo Cho¹, Jeong-Hyeon Lee¹, Tae-Hyung Kim¹

¹School of Integrative Engineering, Chung-Ang University, Seoul 06974, Republic of Korea

P04-035**Fabrication and characterization of starch-based scaffolds for a cultivated meat**

So Yeon Won¹, Hyeon Jin Kim¹, Abdulrahman Sharwani¹, Eun Bi Kim¹, Sun Mi Zo¹, Soon Mo Choi¹, Sung Soo Han¹

¹Yeungnam University, Republic of Korea

P04-036**Cardiomyogenic induction of human mesenchymal stem cells by altered behavior-driven epigenetic memory on a dendrimer-immobilized surface**

Mee-Hae Kim¹, Masahiro Kino-oka²

¹Osaka University, Japan, ²Osaka University, Research Base for Cell Manufacturability, Japan

P04-037**Development of Scaffold for cultured meat in the form of lumps through edible materials and crosslinking**

Yong Joo Seok¹, Kuncham Sudhakar¹, Sunmi Zo¹, Soonmo Choi¹, Kannan badri Narayanan¹, Sung Soo Han¹

¹School of Chemical Engineering, Yeungnam University, 280 Daehak-Ro, Gyeongsan, Gyeongbuk 38541, Republic of Korea

P04-038**Influence of substrate stiffness on the biomechanical characteristics of hepatocytes and hepatic stellate cells in the context of liver fibrosis**

Anwasha Barua¹, Saumitra Das¹, Gondi Kondaiah Ananthasuresh²

¹Indian Institute of Science, ²Indian Institute of Science, India

October 5-6

T05 Biofabrication

P05-001**Fabrication of tissue specific multi-layered scaffold for periodontium regeneration**

Dongyun Kim¹, Hyeongjin Lee¹, JaeYoon Lee¹, YoungWon Koo¹, WonJin Kim¹, Jiun Lee¹, JuYeon Kim¹, SooJung Chae¹, Hanjun

Hwangbo¹, Amin Orash Mahmoudsalehi¹, SeoYul Jo¹, Mohan Pei¹, GeunHyung Kim¹

¹Sungkyunkwan University, Republic of Korea

P05-002**Optimization of printability of alginate-based bioinks using rheology-informed machine learning**

Dageon Oh¹, Seung Yun Nam¹

¹Major of Biomedical Engineering, Division of Smart Healthcare, College of Information Technology and Convergence, Pukyong National University, Republic of Korea

P05-003**Sea anemone-derived silk-like protein-based nanoparticles for systemic cancer therapy**

Hyeokjun Lee¹, Hyung Joon Cha¹

¹POSTECH, Republic of Korea

P05-004**Study of mini-cornea model for eye irritation test**

Seon-Hwa Kim¹, Sang-Hyug Park²

¹Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan, Republic of Korea, ²Major of Biomedical Engineering, Division of Smart Healthcare, College of Information Technology and Convergence, Pukyong National University, Busan, Republic of Korea

P05-005**Guided assembly of spheroids for complex tissue formation using functionalized magnetic nanofibers**

Hayeon Byun¹, Hyewoo Jeong¹, Heungsoo Shin¹

¹Hanyang University, Republic of Korea

P05-006**Fabrication of biodegradable polycarbonate 3D printing scaffold and evaluation of biocompatibility**

Yun Bae Ji¹, Moon Suk Kim¹

¹Ajou university, Republic of Korea

P05-007**3D bioprinted kidney-derived bioink constructs for renal tissue regeneration**

Sang Jin Lee¹, Gabriel Carreno-Galeano¹, James Yoo¹, Anthony Atala¹

¹Wake Forest University School of Medicine, USA

October 5-6

P06 Tissue Engineering

P06-001**Novel GBR method for cranial bone defect healing using dual scaffolds of BMP-2 and FGF-2**

Jaehan Park¹, Narae Jung¹, Sang-Hyun Park³, Seunghan Oh⁴, Sungtae Kim², Jong-Eun Kim¹, Hong Seok Moon¹, Young-Bum Park¹

¹Yonsei University College of Dentistry, ²Seoul National University School of Dentistry, ³TaeWoong Medical Co., Ltd, ⁴Wonkwang University College of Dentistry, Republic of Korea

P06-002**The effect of extracellular matrix glycation on mechanoresponsiveness of cells**

Insung Yong¹, Eun Sun Ji², Yoonmi Hong¹, Jin Young Kim², Pilnam Kim¹

¹KAIST, Republic of Korea, ²Korea Basic Science Institute, Republic of Korea

P06-003

On the way to a bio-printed intervertebral disc (IVD) model: In vitro evaluation of the interactions of ovine IVD cells with a collagen/hyaluronic acid bio-ink

Catherine Le Visage¹, Sebastien Grastilleur¹, Paul Humbert¹, Gregor Miklosic², Boris Halgand¹, Francois Loll¹, Matteo d'Este², Christophe Helary³, Marion Fusellier¹, Jerome Guicheux¹

¹Inserm, Regenerative Medicine and Skeleton, Nantes Universite, France, ²AO Research Institute, Switzerland, ³LCMCP, Sorbonne Universite, France

P06-005

Acellular skin patch of collagen hydrogel fortified with dermal fibroblast conditioned medium (DFCM) for skin therapeutic application: In Vivo Study

Manira Maarof¹, Mh Busra Fauzi¹, Yogeswaran Lokanathan¹, Shiplu Roy Chowdhury¹, Ruzzymah Hj Idrus²

¹Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia, ²Department of Physiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaccob Latiff, 56000 Cheras, Kuala Lumpur, Malaysia

P06-006

Enhancing fat graft survival using biodegradable scaffolds with acellular adipose matrix and magnesium hydroxide- incorporated PLGA microsphere

Ji-Won Jung¹, Da-Seul Kim¹, Dae-Hee Kim³, Semi Lee¹, Euna Hwang², Dong Keun Han¹

¹CHA University, Republic of Korea, ²CHA Gangnam Medical Center, ³Seoul National University, Republic of Korea

P06-007

Co-culture model of 3D renal proximal tubule and human immune cells elucidating progression of acute kidney injury involved with hyperactivation of immune system

Yu Bin Lee¹, Mi-lang Kyun¹, Tamina Park¹, Min-Heui Yoo¹, Inhye Kim¹, Hyewon Jung¹, Myeongjin Choi¹, Seo Yule Jeong¹, Jihye Son¹, Daeui Park¹, Kyoung-Sik Moon¹

¹Korea Institute of Toxicology, Republic of Korea

P06-008

Effects of fibrous collagen/CDHA/hUCS biocomposites on bone tissue regeneration

Chul Ho Jang¹, WonJin Kim³, GeunHyung Kim²

¹Chonnam National University, ²Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Suwon, ³Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Republic of Korea

P06-009

Oxygen-carrying nanomedicine for bone tissue engineering

Chung-Sung Lee¹, Hee Sook Hwang³, Min Lee²

¹Sunmoon Univ., ²University of California Los Angeles, ³Dankook Univ., Republic of Korea

P06-011

Hyaluronic acid hydrogel with gradient mechanical properties for biomedical engineering

Mina Kwon¹, Ki Su Kim¹

¹School of Chemical Engineering, Pusan National University, Republic of Korea

P06-012

Milk derived protein based scaffold enhanced ectopic and orthotopic bone formation

Min Suk Lee¹, Jin Jeon¹, Hee Seok Yang¹

¹Dankook University, Republic of Korea

P06-013

Non-destructive measurement of stiffness of tissue- engineered constructs using ultrasound shear wave elastography

Garin Kim¹, Changan Yoon², Seung Yun Nam¹

¹Major of Biomedical Engineering, Division of Smart Healthcare, College of Information Technology and Convergence, Pukyong National University, Republic of Korea, ²Department of Biomedical Engineering, Inje University, Republic of Korea

P06-014

Decellularized corneal extracellular matrix scaffold for corneal endothelium regeneration

Yyejin Song¹, Changmo Hwang²

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P06-015

The development of a novel white matter hyperintensity model by mimicking blood-brain barrier-oligodendrocytes interface using 3D cell printing

Kingston King-Shi Mok¹, Sunny Hoi-Sang Yeung¹, Gerald Wai-Yeung Cheng¹, Kai-Hei Tse¹

¹Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong S.A.R, China, Hong Kong

P06-016

Mussel adhesive protein-based adhesive to retain stem cells for cartilage regeneration

Ji-Yun Ko¹, Hyung Joon Cha², Seong-Woo Maeng², Sang-Jun Han¹, So-Hyun Park¹, Gun-Il Im¹

¹Dongguk University, Republic of Korea, ²Pohang University of Science and Technology, Republic of Korea

P06-017

Biomimetic composite gelatin methacryloyl hydrogels for improving survival and osteogenesis of human adipose derived stem cells in 3D microenvironment

Eunhyung Kim¹, Heungsoo Shin¹

¹Hanyang university, Republic of Korea

P06-018

Scaled-up hypertrophic cartilage tissue engineering for bone regeneration applications

Le Quang Bach¹, Lim Shin Ru¹, Chan Weng Wan¹, Wu Ying Ying¹, Deepak Choudhury¹

¹Bioprocessing Technology Institute, Singapore

P06-019

Label-free 3D analysis of odontogenic differentiation of stem cell spheroids using raman spectroscopy

Chang Dae Kim¹, Huijung Kim¹, Yoojoong Han³, Intan Rosalina Suhito¹, Yoon Choi¹, Minkyong Kwon¹, Hyung-Ryong Kim², Hyungbin Son¹, Tae-Hyung Kim¹

¹Chung-Ang University, Republic of Korea, ²Jeonbuk National University, ³Nanobase, Inc, Republic of Korea

P06-020

Polymeric composite hydrogel for mimicking mechanochemical microenvironment of cartilage tissue

Anwasha Mukherjee¹, Bodhisatwa Das¹

¹Department of Biomedical Engineering, Indian Institute of Technology Ropar, India

P06-021

Edible starch-based three-dimensional scaffolds for the construction of millimeter-thick cultured meat

Kannan Badri Narayanan¹, Yong Joo Seok¹, Hyunjin Kim¹, Rakesh Bhaskar¹, Sung Soo Han¹

¹Yeungnam University, Republic of Korea

P06-022

Engineered tendon nano-constructs for repair of chronic rotator cuff tears in large-animal model

Yonghyun Gwon¹, Woochan KIM¹, Sunho Park¹, Hyoseong Kim¹, Jangho KIM¹

¹Chonnam National University, Republic of Korea

P06-023

Heat and pressure-assisted soft lithography- and plasma- based multiscale structures for soft and hard tissue engineering

Woochan Kim¹, Yonghyun Gwon¹, Sunho Park¹, Hyoseong Kim¹, Jangho Kim¹

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P06-024

Differentiation of endogenous stem cells migrated with novel chemoattractant into vascular endothelial cells in hybrid hydrogel

Young Hun Kim¹, Min Young Lee¹, Moon Suk Kim¹

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P06-025

Wound healing through recruiting stem cell with Substance P loaded electrospun-biomaterials sheet

Shina Kim¹, Yun Bae Ji¹, Moon Suk Kim¹

¹Ajou university, Republic of Korea

October 5-6

**P09 Therapeutic Technologies
(Preclinical & Clinical Studies)**

P09-001

Long-term clinical efficacy and safety of three- dimensionally printed biomaterial in patients with nasal septal deformities

SeHwan Hwang¹

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P09-002

Use of intraluminal nitinol stent to prevent tracheal stenosis in tracheal anastomosis

Tae Ki Lee¹, Gonhyung Kim¹, Seong Soo Kang², Seok Hwa Choi¹

¹Department of Veterinary Surgery, Chungbuk National University, Republic of Korea, ²Department of Veterinary Surgery, Chonnam National University, Republic of Korea

P09-003

Therapeutic effect of combined mesenchymal stem cells and cartilage acellular matrix injection in a goats OA model

Mijin Kim¹, Jongchan Ahn¹, Jusik Lee¹, Seongsoo Song¹, Seunghee Lee¹, Kyung-Sun Kang¹

¹Stem Cell and Regenerative Bioengineering Institute, Global R&D Center, Kangstem Biotech, Republic of Korea

P09-004

Effect of combined treatment with statins and ezetimibe in NASH model: Inhibition of macrophage

JinSuk Lee¹, Seul Ki Han², Mi Ra Lee¹, Su Jung Park¹, Yu JIN Yi¹, Moon Young Kim²

¹Yonsei university wonju college of medicine, Republic of Korea, ²Wonju Severance Christian Hospital, Department of Internal Medicine, Division of Gastroenterology and Hepatology, Republic of Korea

P09-005

Tissue integration patterns of noncrosslinked and crosslinked collagen membranes: An experimental in vivo study

Jongseung Kim¹, Jin-Young Park¹, Xiang Jin¹, Jae-Kook Cha¹, Jung-Seok Lee¹, Seong-Ho Choi¹, Ui-Won Jung¹

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P09-006

Long term alveolar bone critical sized defect confirmation for GBR membrane in beagle dogs

Yongsu Byun¹, Ig Jun Cho¹, Do Eun Do Eun¹, Hee-Sang Roh², Sori Lee², Juhan Lim², Joong-Hyun Kim¹

¹KBIOHealth, Republic of Korea, ²HYUNDAI BIOLAND Co., Ltd, Republic of Korea

P09-007

Conditioned medium of human pluripotent stem cell-derived neural precursor cells exerts neuroprotective and neuroregenerative effects against ischemic stroke model

JI YONG LEE¹, Hye-Jin Hur³, Han-Soo Kim²

¹Yonsei university wonju college of medicine, ²Catholic Kwandong University College of Medical Convergence, ³Yonsei University College of Medicine, Republic of Korea

P09-008

In vivo high-resolution flexible electrode array for multi-site recording and stimulation

Joong-Hyun Kim¹, Min Chul Song¹, Dong Gwan Shin¹, Sohee Kim², Jae-Won Jang²

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P09-011

Age-related macular degeneration model (AMD) simulated using a biomimetic nanofiber membrane

JEONGHO KIM², Han Sang Park¹, Hong Kyun Kim¹

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P09-012

Quantum dot-loaded biopolymer-based nanocomposite for skin infection treatment

In Ho Nam¹, Yun kee Jo², Hyung Joon Cha¹

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October 5-6

P10 Others

P10-001

3D microenvironment prevents simulated microgravity- mediated changes in T cell transcriptome

Jeremy Teo¹, Jiranuwat Sapudom¹, Praveen Laws¹, Anna Garcia-Sabate¹, Mohammed Daqaq¹

¹NYUAD, United Arab Emirates

P10-002

Hyper O-GlcNAcylation facilitates regenerative dentin formation via inflammation modulation

Elina Pokharel¹, Tae-Young Kim¹, Yam Prasad Aryal¹, Jae-Kwang Jung⁵, Seo-Young An², Chang-Hyeon An², Youngkyun Lee¹, Do-Yeon Kim⁴, Jung-Hong Ha³, Jae-Young KIM¹

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P10-003

Anti-biofouling, waterproof and insulating encapsulation for bioelectronics with improved longevity and robustness

Sooyoung Hwang¹, Kijun Park¹, Jae Park¹, Jungmok Seo^{*1}

¹Yonsei University, Republic of Korea

P10-004

Development of *in-situ* evaluation system for the surface lubrication function of tissue-engineered cartilage by using surface plasmon resonance

Shin Iteda², Yusuke Morita¹, Koji Yamamoto^{*1}

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²Graduate School of Life and Medical Sciences, Doshisha University, Japan

P10-005 Withdraw

Concurrence of cartilage degeneration, vessel formation and subchondral bone remodelling in osteoarthritic hip joints

Maryam Tamaddon^{*1}, Marysia Lis¹, Chaozong Liu¹

¹University College London, United Kingdom

P10-006

Sustained drug delivery of doxorubicin and enhanced anti-cancer efficacy via intra-tumoral injection of in-situ forming click-cross-linked hydrogel

Hyeon Jin Ju¹, Min Ju Kim¹, So Jeong Park¹, Moon Suk Kim^{*1}

¹Ajou University, Republic of Korea

P10-007

Treatment of acne vulgaris through electrostatic interaction between adapalene and cationic polycaprolactone emulsifier

Soyeon Lee¹, Yun Bae Ji¹, Min Ji Han¹, Moon Suk Kim^{*1}

¹Ajou university, Republic of Korea

P10-008

Computational modeling approach to measure cell nucleus elasticity using traction force microscopy

Rakesh Joshi¹, Dong-Hwee Kim^{*1}

¹Korea University, Republic of Korea

Part 2

October 7-8
P02 Organoids

P02-009

Bone organoid model for studying bone metabolism and disease

Hyang Kim¹, Jung-Hwa Choi¹, SeulGi Kim¹, SaeRom Jeoung³, Mina Choi⁴, Seung-Yeol Lee^{*2}

¹MyongJi Hospital, New Horizon Biomedical Engineering Institute, ²MyongJi Hospital, Hanyang University College of Medicine, ³Ewha Womans University, College of Medicine, ⁴MyongJi Hospital, Department of Orthopaedic Surgery, Republic of Korea

P02-010

Development of a hypoxia-enhanced kidney organoids model that recapitulates human renal tubular structure and function

Hyeonji Lim¹, Dong Sung Kim², Dohui Kim², Tae-Eun Park^{*1}

¹Ulsan National Institute of Science and Technology, ²Pohang University of Science and Technology, Republic of Korea

P02-011

Establishment of liver organoid system for comprehensive evaluation of post-metabolic activity of endocrine-disrupting chemicals

Ji Hyun Moon¹, Young Jae Park¹, Jihyun Chun¹, Da Woon Jung¹, Hyun-Soo Roh³, Ho Jin Park², Kwan-Hyuck Baek³, Hong Jin Lee², Do Yup Lee^{*4}

¹Department of Agricultural Biotechnology, Seoul National University, Seoul, 08826, Republic of Korea, ²Department of Food Science and Biotechnology, Chung-Ang University, Anseong, 17546, Republic of Korea, ³Department of Molecular and Cellular Biology, Sungkyunkwan University School of Medicine, Suwon, Gyeonggi, 16419, Republic of Korea, ⁴Department of Agricultural Biotechnology, Seoul National University, Seoul, 08826, Republic of Korea / Center for Food and Bioconvergence, Seoul National University, Seoul 08826, Republic of Korea / Research Institute for Agricultural and Life Sciences, Seoul National University, Seoul 08826, Republic of Korea

P02-012

Retinoic acids reciprocally regulate the luminal and acinar cell differentiation via the RAR-TGF β signaling in adult salivary gland organoids

jisun Kim¹, Yeo Jun Yoon¹, Jae-Yol Lim^{*1}

¹Department of Otorhinolaryngology, Yonsei University College of Medicine, Republic of Korea

P02-013

Glutamate-inducing MAO-B as a critical modulator for the astrocytic scar in a human glioblastoma microenvironment organoid and xenograft mouse model

Yen Diep¹, Hae Young Ko³, Tai Young Kim², C. Justin Lee², Mijin Yun³, Hansang Cho^{*1}

¹Institute of Quantum Biophysics, Sungkyunkwan University, ²Center for Cognition and Sociality, Institute for Basic Science, ³Department of Nuclear Medicine, Yonsei University College of Medicine, Republic of Korea

October 7-8
P03 Stem Cells

P03-015

Preclinical study of human bone marrow-derived mesenchymal stem cells using a three-dimensional manufacturing setting for enhancing spinal fusion

Hyemin Choi¹, Sumin Cho², Jae Min Cha², Inbo Han^{*1}

¹CHA Bundang Medical Center, Cha University, ²Incheon National University, Republic of Korea

P03-016

Anti-inflammatory effect of human fetal cartilage-derived progenitor cells (hFCPCs) on IL-1 β -mediated osteoarthritis (OA) phenotypes in vitro

JIYOUNG LEE¹, Hwal Ran Kim³, So Ra Park¹, Byoung-Hyun Min², Byung Hyune Choi^{*1}

¹Inha university, ²Ajou University, ³AATEMs Inc, Republic of Korea

P03-017

Enhancement of the stem cell engraftment and differentiation for cartilage regeneration by using transglutaminase- 4/hydrogel

SUN YOUNG WANG¹, Hyun Cheol Bae¹, Won-Young Cho¹, Hee Jung Park¹, Ha Ru Yang¹, Hyuk-Soo Han^{*1}

¹Department of Orthopedic Surgery, Seoul National University Hospital, Republic of Korea

P03-018

Hypoxic condition enhances chondrogenesis in synovium- derived mesenchymal stem cells

Ha Ru Yang¹, Hyun Cheol Bae¹, Won young Cho¹, Hee Jung Park¹, Sun Young Wang¹, You Jung Kim¹, Hyuk-Soo Han^{*1}

¹SEOUL NATIONAL UNIVERSITY HOSPITAL, Republic of Korea

P03-019

Establishment of induced pluripotent stem cells by lentiviral reprogramming of primary dermal fibroblasts

Fazlina Nordin^{*2}, Izyan Mohd Idris², Nur Jannaim Muhammad¹, Rosnani Mohamed¹, Fatimah Diana Amin Nordin¹, Julaina Abdul Jalil¹, Adiratna Mat Ripen¹, Gee Jun Tye⁴, Wan Safwani Wan Kamarul Zaman³, Min Hwei Ng²

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P03-020

Characteristics of mesenchymal stem cells from various tissue source according to culture media type

Min Hee Kang¹, Ji Eun Jang¹, Yuyeong Yang¹, Jeong Eon Lee¹, Joo youn Lee^{*1}

¹Xcell therapeutics Inc., Republic of Korea

P03-021

Transcriptomic changes of the tonsil-derived mesenchymal stem cells upon the inhibition of the rate-limiting enzymes for nucleotide biosynthesis

Steve (Se-Young) Oh¹, Young Min Choi⁴, Yoon Shin Park³, Inho Jo^{*2}

¹Department of Molecular Medicine, College of Medicine, Ewha Womans University, ²Department of Molecular Medicine, College of Medicine Ewha Womans University; Korean Fund for Regenerative Medicine, ³Department of Biological Sciences and Biotechnology, College of Natural Sciences, Chungbuk National University, ⁴Department of Molecular Medicine, College of Medicine/Graduate Program in System Health Science and Engineering, Ewha Womans University, Republic of Korea

P03-022

Inhibitory effect of tonsil-derived mesenchymal stem cell proliferation by treatment of non-structural protein 9 through PI3K/Akt signaling

Kyeong Eun Lee¹, Da Hyeon Choi¹, Min Ji Cho¹, Jeong Eun Kim¹, Seung Jae Yun¹, Yoon Shin Park^{*1}

¹Department of Microbiology, School of Biological Sciences, College of Natural Sciences, Chungbuk National University, Republic of Korea

P03-023

Changes in the integrin $\alpha 3$ expression controls tonsil derived mesenchymal stem cell proliferation and senescenceDa Hyeon Choi¹, Se-Young Oh², Kyeong Eun Lee¹, Inho Jo², Yoon Shin Park^{*1}¹Chungbuk National University, ²Ewha Womans University, Republic of Korea

P03-028

Bone regeneration induced by osteoblast-like cells (CF- M801) differentiated from umbilical cord stroma cells in a goat partial defect modelHyun-Sook Park^{*1}, Sunray Lee¹, Yeon Kyung Lee¹, Myoung Hwan Kim²¹CEFO Co., Ltd., ²KPC, Republic of Korea

P03-029

Optimization of mesenchymal stem cell spheroids for enhanced angiogenesisEun Ji Jeong², Ji Suk Choi¹, Min Rye Eom¹, Seong Keun Kwon^{*1}¹Seoul National University Hospital, ²Seoul National University, Republic of Korea

P03-030

AGEs-induced oxidative stress regulation as a potential target to attenuate the impact of the diabetic microenvironment on mesenchymal stromal cellsRebecca Landon^{*1}, Abolfazl Barzegari², Nathanael Larochette¹, Virginie Gueguen², Hervé Petite¹, Graciela Pavon-Djavid², Fani Anagnostou³¹Université Paris Cité, CNRS, INSERM, ENVA, B3OA, F-75010 Paris, France, ²INSERM U1148, Laboratory for Vascular Translational Science, Cardiovascular Bioengineering, Université Sorbonne Paris Nord, 93430 Villetaneuse, France., ³Université Paris Cité, CNRS, INSERM, ENVA, B3OA, F-75010 Paris, France; Department of Periodontology, Service of Odontology-Pitié Salpêtrière Hospital, AP-HP et U.F.R. of Odontology, 75013 Paris, France, France

P03-031

The therapeutic potential of MSCs administration in naturally aged sarcopenia mouse modelYu Hsuan Belle WANG¹, Yuk Wai Wayne LEE^{*1}¹The Chinese University of Hong Kong, Hong Kong

October 7-8

P04 Biomaterials

P04-039

Development of a mineralized decellularized tissue for soft-hard inter-regional tissue applicationTsuyoshi Kimura^{*1}, Mika Suzuki¹, Mako Kobayashi¹, Masahiro Okada², Takuya Matsumoto², Naoko Nakamura³, Yoshihide Hashimoto¹, Akio Kishida¹¹Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, ²Department of Biomaterials, Okayama University,³Department of Bioscience and Engineering, Shibaura Institute of Technology, Japan

P04-040

Plasmid dna nanoparticles for oral therapyJeong Man Ahn², Young Jae Park¹, Jo An Hong¹, Dong Yun Lee³, Yong Kyu Lee^{*1}¹Korea national university of transportation, ²Hanyang University,³HanYang University, Republic of Korea

P04-041

Process development for nerve regeneration implant using the 3D bio-printerSongho Kim¹, Dongwon Seok¹, Chae Hyeon Ryu¹, Inho Kim^{*1}¹T&R Biofab, Republic of Korea

P04-042

Development of BMP-loaded bioabsorbable microspheres with calcium-binding polymer-coating for high-efficiency transportMyoung-Hee Kang¹, Min Jae Kim², Yeo Song Lee¹, Hien Thai Bao Dieu¹, Min-Ha Choi¹, I Zhen Ma¹, Yan Lee², Ji-Ung Park^{*1}¹Department of Plastic and Reconstructive Surgery, SMG-SNU Boramae Medical Center, ²Department of Chemistry, Seoul National University, Republic of Korea

P04-043

Liquid-type plasma-controlled in situ crosslinking of silk hydrogel displayed better bioactivities and mechanical propertiesJu Hyun Yun¹, Sungryeal Kim², Hye-Young Lee¹, Chul-Ho Kim¹, Yoo Seob Shin^{*1}¹Ajou University, ²Inha University, Republic of Korea

P04-044

Hydroxyl radical generation mediated antibacterial therapeutics by catechol functionalized hyaluronic acid hydrogels and zinc oxide nanoparticlesMyoung-Hee Kang¹, Seol-Ha Jeong², Changha Hwang², Min-ha Choi¹, Jiwon Kang¹, Hyoun-Ee Kim², Ji-Ung Park^{*1}¹Department of Plastic and Reconstructive Surgery, SMG-SNU Boramae Medical Center, ²Department of Materials Science and Engineering, Seoul National University, Republic of Korea

P04-045

Development of cooling system for nerve regeneration implant using biomaterialsDongwon Seok¹, Chae Hyeon Ryu¹, Songho Kim¹, Inho Kim^{*1}¹T&R Biofab, Republic of Korea

P04-046

Process development of heterogeneous sheets for nerve regeneration implantChae Hyeon Ryu¹, Songho Kim¹, Dongwon Seok¹, Inho Kim^{*1}¹T&R Biofab, Republic of Korea

P04-047

Senescent cancer cell-derived nanovaccine for cancer therapySangJun Moon¹, Jihye Hong¹, Byung-Soo Kim^{*1}¹Seoul National University, Republic of Korea

P04-048

Fabrication of poly(HEMA-co-MMA) porous scaffold with highly biocompatibility for soft tissue regenerationYong Sang Cho¹, Sohyun Ki¹, Jieun Park¹, Byeong Kook Kim¹, Tae-Hyun Kim^{*1}¹R&D center, TE BioS Co., Ltd, 194-41, Osongsaengmyeong 1-ro, Heungdeok-gu, Cheongju-si, Republic of Korea

P04-049

Fabrication of poly(HEMA-co-MMA) scaffold having surface roughness and modulus for soft-tissue engineeringYong Sang Cho¹, Byeong Kook Kim¹, Sohyun Ki¹, Jieun Park¹, Tae-Hyun Kim^{*1}¹R&D center, TE BioS Co., Ltd, 194-41, Osongsaengmyeong 1-ro, Heungdeok-gu, Cheongju-si, Republic of Korea

P04-050

In situ forming elastin-like polypeptide hydrogel for injectable drug delivery applicationsYeongjin Noh¹, Kangseok Lee¹, Chaenyung Cha^{*1}¹Ulsan National Institute of Science and Technology, Republic of Korea

P04-051**Applicability of chemically-defined media in the development of cell therapy using keratinocyte**Hong Seok Kang¹, Ji Hye Lee¹, Ji Soo Park¹, Jae Keun Lee¹, Joo Youn Lee^{*1}¹Xcell Therapeutics Inc., Republic of Korea**P04-052****Comparative study of mesenchymal stem cell media for culture reproducibility and consistency**Min Hee Kang¹, Ji Eun Jang¹, Yuyeong Yang¹, Jong Jin Kim¹, Jae Woo Kang¹, Joo youn Lee^{*1}¹Xcell therapeutics Inc., Republic of Korea**P04-053****Applicability of chemically-defined media in hair follicle cell culture for hair loss cell therapy**Ji Soo Park¹, Hong Seok Kang¹, Ji Hye Lee¹, Jae Keun Lee¹, Ju Yeong Hwang², Mei Zheng², Yong Jin Choi², Joo Youn Lee^{*1}¹Xcell Therapeutics Inc., ²Epi Biotech Co., Ltd., Republic of Korea**P04-054****Coating of graphene oxide on a large-area plastic surface to fabricate a novel cell culture vessel**Danbi Park¹, Jae Bum Park¹, Jeung Soo Huh¹, Jeong Ok Lim^{*2}¹Kyungpook national university, ²Kyungpook national university, Kyungpook National University Hospital, Republic of Korea**P04-055****Biological and mechanical properties of xenograft coated with catechol- and thiol-containing binder**Sang Ho Jun^{*1}, Ki Baek Yeo¹¹Korea University, Republic of Korea**P04-056****Octanoyl glycol chitosan activates cell cycle via up-regulation of cyclin D1 protein and accelerate osteo induction in tonsil derived mesenchymal stem cells**Kyeong Eun Lee¹, Da Hyeon Choi¹, Sun-Woong Kang³, Kang Moo Huh², Yoon Shin Park^{*1}¹Department of Biological Sciences and Biotechnology, College of Natural Sciences, Chungbuk National University, ²Department of Polymer Science and Engineering, Chungnam National University, ³Research Group for Biomimetic Advanced Technology, Korea Institute of Toxicology, Republic of Korea**P04-057****Direct conversion of mouse embryonic fibroblasts into mesenchymal stem-like cells with cell-permeable Oct4 gene delivery**Da Hyeon Choi¹, Kyeong Eun Lee¹, Jue-Yeon Lee³, Yoon Jeong Park², Yoon Shin Park^{*1}¹Chungbuk National University, ²Seoul National University, ³Nano Intelligent Biomedical Engineering Corporation (NIBEC), Republic of Korea**P04-058 Withdraw****Effect of HA particle size and quantity on the bioactive and biological behaviour of PU scaffolds**F Alhamoudi^{*1}, A Alshadidi¹, Sunil Kumar V1, L Aldosari², AA Chaudhry⁵, GC Reilly⁴, I U Rehman³¹Dental Technology Department, Applied Medical Sciences, King Khalid University, KSA, ²College of Dentistry, King Khalid University, KSA, ³Bioengineering Department, Lancaster University, UK., ⁴INSIGNEO institute for in silico Medicine, University of Sheffield, UK, ⁵Interdisciplinary Research Centre in Biomedical Materials (IRCBM), Pakistan, Saudi Arabia**P04-059****Design and preparation biodegradable staple for the intestinal suture**Runjie Zhang¹, Ching-Jung Chen¹, Jen-Tsai Liu^{*1}¹University of Chinese Academy of Sciences, China**P04-060****Development of porous PLLA/DCPA short fiber for bone formation**Mao Takadera², Koji Yamamoto¹, Yusuke Morita^{*1}¹Department of Biomedical Engineering, Doshisha University, ²Graduate School of Life and Medical Sciences, Doshisha University, Japan**P04-061****Bile acids containing nanoparticle and oral delivery strategies**Kyoungh Sub Kim^{*1}¹The Catholic University of Korea, Department of Biotechnology, Republic of Korea**P04-062****Optimization of chemically defined soluble basement membrane solution as an alternative to matrigel for epithelialization studies**Maitraee Mistry¹, Barbara P. Chan^{*1}¹Tissue Engineering Lab, Department of Mechanical Engineering, The University of Hong Kong, Pokfulam, Hong Kong; Advanced Biomedical Instrumentation Centre, Hong Kong Science Park, Shatin, Hong Kong**P04-063****Effects of an injectable in situ hyaluronic acid hydrogel combined with basic fibroblast growth factor for a dermal filler**Dohyun Kim¹, Hyewon Kim¹, Hyun Jong Lee², Won-Gun Koh^{*1}¹Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, Republic of Korea, ²Department of Chemical and Biological Engineering, Gachon University, 1342 Seongnam-daero, Seongnam-si, Gyeonggi-do 13120, Republic of Korea**P04-064****The effect of biphasic calcium phosphate and demineralized bone matrix on tooth eruption in mongrel dogs**Ji-Young Kim¹, Sukwha Kim², Jee Hyuk Chung¹, Sungmi Jeon¹, Ki-Hyun Cho¹, Seyeon Lee¹, Byung Joon Kim^{*1}¹Division of Pediatric Plastic Surgery, Seoul National University Children's Hospital, ²Department of Plastic Surgery, CHA Bundang Medical Center, Republic of Korea**P04-067****Application of hybrid graphene oxide and silver nanoparticles in wound healing**Atiqah Salleh¹, Norlaila Mustafa³, Yeit Haan Teow², Ebrahim Mahmoudi², Mh Busra Fauzi^{*1}¹Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur 56000, Malaysia, ²Department of Chemical and Process Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, Bangi 43600, Malaysia, ³Department of Internal Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur 56000, Malaysia, Malaysia**P04-068****Study on corrosion mechanism of 3D-printed porous Ti-Nb-Zr-Sn alloy scaffolds immobilized with type I collagen in simulated inflammatory conditions**Jia-Yi Wen¹, Her-Hsiung Huang^{*2}¹Institute of Oral Biology, National Yang Ming Chiao Tung University, ²Department of Dentistry, National Yang Ming Chiao Tung University, Chinese Taipei**P04-069****Towards allogeneic xenograft: The use of human induced pluripotent stem cells in recellularizing xenogeneic cardiac scaffolds do not activate human naïve neutrophils**Reem AL Hejailan¹, Somaya Al Qattan¹, Futwan AL Mohanna^{*1}

¹King faisal hospital and research center, Saudi Arabia

P04-070

Magnesium-encapsulated injectable hydrogel and 3D- engineered polycaprolactone conduit facilitate peripheral nerve regeneration

Ling Qin^{*1}, Zhi YAO¹, Weihao YUAN¹, Jiankun XU¹, Wenxue TONG¹, Liming BIAN²

¹The Chinese University of HK, ²South China University of Technology, Hong Kong

P04-071

Biomaterials for enhancing cell survival in low water environment

Lady Barrios Silva^{*2}, Nik Aliaa¹, Darren Player¹, David Chau¹

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P04-072

Synthesis of polysaccharide-based nanoparticles for delivery of genistein to combat colon cancer treatment

Dr. Ashok Kumar Jangid¹, Dr. Kyobum Kim^{*2}, Dr. Hitesh Kulhari³

¹Dongguk University, ²Department of Chemical & Biochemical Engineering, College of Engineering, Dongguk University, Seoul, South Korea, ³School of Nano Sciences, Central University of Gujarat, Gandhinagar-382030, Republic of Korea

P04-074

Design of a conductive nerve guidance conduit with silver nanoparticles/poly(vinyl alcohol) hydrogels for peripheral nerve regeneration

Sujeong Park¹, Youngmee Jung^{*1}

¹Korea Institute of Science and Technology (KIST), Republic of Korea

P04-075

Measurement of cell-ECM, intracellular stresses, and intracellular tensions using gelatin methacryloyl (GelMA) hydrogels based traction force microscopy (TFM), intracellular force microscopy (IFM), and monolayer stress microscopy (MSM)

Sung Sik Hur², Kyungmu Noh¹, Ji Hoon Jeong¹, Jae Hong Park³, Jin Kwon Chung⁴, Yongsung Hwang^{*1}

¹Soonchunhyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, Cheonan-si 31151, Korea, ²Soonchunhyang University, ³Department of Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University Cheonan Hospital, Cheonan, Republic of Korea, ⁴Department of Ophthalmology, Soonchunhyang University Seoul Hospital, Seoul, Republic of Korea

P04-076

Cytotoxicity effect of SIM-PLGA chitosan coated scaffolds on human osteoblast (hFOBs) proliferation

NUR ALIANA HIDAYAH MOHAMED^{*1}, Khairani Hasuna Jaapar², Ahmad Fareez Mohd Rawi², Andrew Morris³, Nashiru Billa⁴

¹UNIVERSITI TEKNOLOGI MARA, ²University of Nottingham, ³Dean School of Pharmacy University of Swansea, ⁴Professor at Qatar University, College of Pharmacy, Malaysia

P04-077

Bioinks based on recombinant collagen for 3D bioprinting

Jayden Park², Yunxiao Liu¹, Eva Loo^{*1}

¹Evonik (SEA) Pte Ltd, ²Evonik Korea Ltd, Republic of Korea

October 7-8 P05 Biofabrication

P05-008

IPN bioink for 3D printing macro-scale, complex tissue analogues

Murugan Ramalingam^{*1}, Guang-Zhen Jin¹, Deepti Rana², Jung-Hwan Lee¹, Hae-Won Kim¹

¹Dankook University, ²University of Twente, Republic of Korea

P05-009

Development of a flexible vascular external stent for the treatment of aortic aneurysm

Jin Woo Lee^{*1}, Jung Kyu Park¹, Kuk Hui Son²

¹Gachon University, ²Gachon University Gil Medical Center, Republic of Korea

P05-011

Extrusion-based 3D bioprinting from bench to bedside applications in bone tissue engineering using platelet rich plasma and scaffolding materials

Dongxu Ke¹, Xi Yang^{*1}

¹Novaprint Therapeutics, China

P05-012

Development of functional insulin-producing cell clusters from iPSCs using microgravity bioreactor

Hanse Goh², In Kyong Shim¹, Yu Na Lee¹, Sehui Jeong¹, Jeong Eun Kim¹, Song Cheol Kim^{*3}

¹Asan Institute for Life Sciences, Asan Medical Center, University of Ulsan College of Medicine, ²UNIVERSITY OF ULSAN, ³Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea

P05-013

Highly scalable and automation compatible organ-on-chip platform for biological barriers modeling

Prateek Singh^{*1}, Hoang Tuan Nguyen¹, Mimosa Peltokangas¹, Pauliina Juntilla¹, Siiri Rissanen¹

¹Finnadvance, Finland

October 7-8 P06 Tissue Engineering

P06-026

Development of injectable click crosslinked hydrogel formulation containing Substance P analog and BMP-2 mimetic peptide to induce migration and bone formation of stem cell

Hee Eun Kim¹, Minhyuk Kim¹, Moon Suk Kim^{*1}

¹Ajou university, Republic of Korea

P06-027

The senolytic drug JQ1 removes senescent cells via ferroptosis

SeokHyeong Go¹, Mikyung Kang⁴, Sung Pil Kwon³, Mungyo Jung¹, Ok Hee Jeon², Byung-Soo Kim^{*1}

¹Seoul National University, ²Korea University of College of Medicine, ³Korea Institute of Science and Technology, ⁴Harvard Medical School, Republic of Korea

P06-028

Development of bioreactor system for full-thickness corneal tissue engineering

Changmo Hwang^{*1}, Haneul Lee³, Heungwon Tcha²

¹Univ. Of Ulsan College Of Medicine, ²Department of Ophthalmology, Asan Medical Center, ³Biomedical Engineering Research Center, Asan Institute for Life Science, Asan Medical Center, Republic of Korea

P06-029

Multimodal therapy strategy based on highly functional hydrogels for the repair of spinal cord injury

Eun Ji Roh¹, Da-Seul Kim², Jun Hyuk Kim¹, Inbo Han^{*1}

¹CHA University School of Medicine, ²CHA University School of Medicine, Chung-Ang University, Republic of Korea

P06-030

TGF- β -induced transglutaminase-2 triggers catabolic response in osteoarthritic chondrocytes by modulating MMP-13 and collagen II

Hee Jung Park¹, Hyun Cheol Bae¹, Won-Young Cho¹, Ha Ru Yang¹,
Sun Young Wang¹, You Jeong Kim¹, Hyuk-Soo Han*¹
¹Seoul National University Hospital, Republic of Korea

P06-031

The possibility of vitronectin-derived peptide as a treatment for pulp capping

Choyeon Park¹, Byung-Moo Min¹, Minju Song², Eunhye Lee¹,
Sun-Young Kim*¹
¹Seoul National university, ²Dankook University, Republic of Korea

P06-032

Fabrication and evaluation of rhBMP-2 incorporated 3D printed scaffold as a novel bone substitute in calvarial defect mouse model

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P06-033

Changes of characteristics of mouse embryonic fibroblasts according to cryopreservation period for tissue engineering

MinJi Cho¹, Ju Kwang Choi¹, Kyeong Eun Lee¹, Jiwon Park¹, Da Hyeon Choi¹, Yoon Shin Park*¹
¹Chungbuk National University, Republic of Korea

P06-034

Optimization of the purification method for skeletal muscle-derived fibroblast

MinJi Cho¹, Ju Kwang Choi¹, Jiwon Park¹, Da Hyeon Choi¹, Kyeong Eun Lee¹, Yoon Shin Park*¹
¹Chungbuk National University, Republic of Korea

P06-036

Thermoresponsive nanofiber-based microwell scaffolds capable of formation and retrieval of salivary gland stem cell spheroids for the regeneration of irradiation-damaged salivary glands

Su jeong Ahn², Hye Jin Hong², Jae-Min Cho¹, Yeo-Jun Yoon¹, DoJin Choi¹, Soohyun Lee¹, Hwajung Lee², Jae-Yol Lim¹, Won-Gun Koh*²
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P06-038

Wound healing applications of sericin/CMC/MSM incorporated hydrogel

Hyun Lyung Jeong*¹, Jang soo Suh¹
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P06-039

The role of mechanotransduction in tissue remodeling by TGF- β induced fibroblast activation

Inwoo Son¹, Yongjun Jang¹, Myeongjin Kang¹, Yongdoo Park*¹
¹Korea University, Republic of Korea

P06-040

Myoblast alignment and differentiation in tissue-engineered skeletal muscle fiber

Takuya Hattori², Koji Yamamoto¹, Yusuke Morita*¹
¹Department of Biomedical Engineering, Doshisha University, ²Graduate School of Life and Sciences, Doshisha University, Japan

P06-042

Application of developmental signaling regulations in alveolar bone regeneration after the periodontitis

Deuk-Yeon Lee¹, Yam Prasad Aryal¹, Elina Pokharel¹, Tae-Young Kim¹, Anna Kim¹, Chang-Hyeon An¹, Jae-Kwang Jung¹, Jae-Young Kim¹, Seo-Young An*¹

¹Kyungpook National University, Republic of Korea

P06-043

Functional evaluation of developmental signaling molecules for dentin regeneration

Moo-Keun Song¹, Elina Pokharel¹, Tae-Young Kim¹, Jung-Hong Ha¹, Jae-Young Kim¹, Chang-Hyeon An*¹
¹Kyungpook National University, Republic of Korea

P06-044

Expression pattern and developmental function of Piezo1 in salivary gland morphogenesis

Elina Pokharel¹, Tae-Young Kim¹, Anna Kim¹, Ji-Youn Kim²,
Jae-Young Kim¹, Jae-Kwang Jung*¹
¹Kyungpook National University, ²Gachon University, Republic of Korea

P06-045

Smart piezoelectric nano hybrid scaffold as noninvasively controllable self-powering mechano-electrical stimulator for enhanced bone tissue engineering

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P06-047

PTD-BMP2 enhances the wound healing in type 1 diabetic mice

Kyoung-Mi Lee³, Jae Wan Suh⁴, Eun Ae Ko¹, Dong Suk Yoon¹, Kwang Hwan Park¹, Nam Hee Kim², Jong In Yook², Jin Woo Lee*¹
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P06-048

Nanotrap-mediated enhanced cell coating on the tubular scaffold for trachea regeneration

Young Ju Son¹, Ji Suk Choi¹, Min Rye Eom¹, Eun Ji Jeong¹, Jeong Hoon Lee¹, Guk Yeon Jo¹, Seong Keun Kwon*¹
¹Seoul National University Hospital, Republic of Korea

P06-049

Polydopamine/hyaluronic acid-based salivary gland tissue engineering platform inspired by roles of hyaluronic acid during salivary gland development

Sang-woo Lee¹, Haeshin Lee³, Ji Hyun Ryu*²
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P06-050

Biomimetic 3D-bioprinted skin scaffolds for wound healing and regeneration

Viorica Patrulea*¹, Carla V. Fuenteslópez², Hua (Cathy) Ye²
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October 7-8

P07 Enabling Technologies

P07-001

Microfluidic chips for modeling of outer blood-retina barrier using iPSC derived RPE and endothelial cells

Tea Soon Park¹, Eric Nguyen¹, Haig Pakhchanian¹, Davide Ortolan¹, Nikhil Vettikatu¹, Devika Bose¹, Ruchi Sharma¹, Arvydas Maminishkis¹, Kapil Bharti¹
¹NIH, USA

P07-002

Magnetic resonance relaxometry as a tool for tracking induced pluripotent stem cell variability

Daniel Roxby^{*1}, Jiahui Chen¹, Jerome Tan Zu Yao¹, Tan Dai Nguyen², Sing Yian Chew¹, Jongyoon Han²

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P07-003

Natural scaffolds for cultured meat production

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P07-004

Induced pluripotent stem cell-derived corneal endothelial-like cell therapy for corneal endothelial dysfunction

HUN LEE^{*1}, Yoonkyung Park¹, Jeong Hye Sunwoo¹, Whanseon Lee¹, Jin Kim¹, Eun-Ah Ye¹, Jae Yong Kim¹, Hungwon Tchah¹, Eunju Kang², Seongjun So²

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P07-005

Improving anti-oxidative resistance of mesenchymal stem cells (MSCs) by priming to quiescent state

Trung Xuan Ngo^{*1}, Eiko Uno¹, Yui Ueno², Shigeyuki Ohta², Hiroyuki Nishida², Hideki Nonaka², Kazuma Suda¹, Tsuyoshi Ishii¹

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October 7-8

P08 Manufacturing and Bioprocess

P08-001

Label-free detection of residual undifferentiated iPSCs from their differentiated progenitor cells by microfluidic raman spectroscopy

Tan Dai Nguyen¹, Jiahui Chen⁵, Quan Liu⁴, Sing Yian Chew³, Jongyoon Han^{*2}

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P08-002

Measurement of critical motions in the medium change process in differentiation culture of retinal pigmented epithelial cells

Sathidaphorn Sungwallek², Kazuhiro Fukumori¹, Atsuhiko Saito¹, Masahiro Kino-oka^{*3}

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P08-003

Outcomes and quality of pancreatic islet cells isolated from surgical specimens for research on diabetes mellitus

Ju Yun Oh¹, Yang Hee Kim¹, Song Lee¹, Song Cheol Kim^{*1}

¹Asan Medical Center, Republic of Korea

P08-004

A method for mass production and characterization of human-derived nasal septum cartilage chondrocytes (hNCs) for allogeneic cell therapy products

Jung Ho Jeon¹, Sung Won Kim^{*2}

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P08-005

Effect of ROCK inhibitor on aggregate growth of human induced pluripotent stem cells in suspension culture

Takaki Matsumoto¹, Mee-Hae Kim¹, Masahiro Kino-oka^{*2}

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P08-006

Spatio-temporal analysis of phase transitions in corneal epithelial cell sheet using an agent-based model

Junya Kamioka², Kei Sasaki⁵, Koichi Baba⁶, Tomoyo Tanaka¹, Yosuke Teranishi¹, Takahiro Ogasawara¹, Masukazu Inoue¹, Ken-ichiro Hata¹, Kohji Nishida⁴, Masahiro Kino-oka^{*3}

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P08-007

Cell-fiber culture system: A powerful platform for scalable expansion of adherent and non-adherent cells

Lucas Trindade^{*1}, Tomoyuki Kaneiwa¹, Koshi Oyanagi¹, Yuki Takagi¹, Kazuhiro Ikeda¹

¹CellFiber Co., Ltd., Tokyo, Japan

October 7-8

P09 Therapeutic Technologies (Preclinical & Clinical Studies)

P09-013

Effect of aronia extract on the regulation of collagen synthesis in skin cells and skin equivalents

Hwa-Rim Lee¹, Hye Guk Ryu², Yunji Lee¹, Ju An Park¹, Seongju Kim⁴, Chang Eon Lee², Kyung-Ha Lee³, Sungjune Jung*¹

¹Department of Materials Science & Engineering, Pohang University of Science and Technology (POSTECH), ²Division of Cosmetic Science and Technology, Daegu Haany University, ³Department of Molecular Biology, Pusan National University, ⁴Department of Mechanical Engineering, Pohang University of Science and Technology (POSTECH), Republic of Korea

P09-014

Effect of oxytocin receptor inhibitor on hard tissue regeneration in dental pulp

Dohyun Kim¹, Jin Man Kim*²

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P09-015

Risk of secondary nonhematologic malignancies after allogeneic stem cell transplantation: A nationwide case-control cohort study

Sung-Soo Park¹, Seunghoon Han*²

¹Seoul St. Mary's hospital, Catholic university, ² Department of Pharmacology, College of Medicine, The Catholic University of Korea, Republic of Korea

P09-016

Destroying multidrug-resistant lung cancer by mitochondrial damage and ATP inhibition using nanodrug

Jun-Young Park¹, Geunhye Kim³, Jaewook Lee¹, Dongwoo Khang*²

¹Lee Gil Ya Cancer and Diabetes Institute, Gachon University, ²Department of Physiology, College of Medicine, Gachon University, ³Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, Republic of Korea

P09-017

Polycaprolactone scaffold cell-based nasal implant using 3D printing

EunSoo Park*¹, DongGyu Kim¹, YoungJin Kim¹, Galina Khan¹

¹Soonchunhyang University Bucheon Hospital, Republic of Korea

P09-018

Small molecule mediated intervertebral disc repair via regulation of proteoglycan metabolism

Victor Leung*¹, Yuen-Kee Tsui¹, Danny Chan¹, Kenneth Cheung¹, Yi SUN¹

¹The University of Hong Kong, Hong Kong

P09-019

Transverse tibial cortex transport surgery: A novel treatment strategy for diabetic ulcers and biological mechanisms

GANG LI*¹

¹The Chinese University of Hong Kong, China

P09-020

miR-31-3p functions as a tumor suppressor by directly targeting GABBR2 in prostate cancer

Sujin Choi¹, Soonchul Lee¹, Sin Hyung Park³, Young-Hoon Han⁴,

Junwon Choi², Issac Kim¹, Jusung Lee¹, Hyun-Ju An*¹

¹CHA University, ²Ajou University, ³SOON CHUN HYANG University, ⁴Korea Institute of Radiological and Medical Sciences, Republic of Korea

P09-021

Plasma and tissue proteomics to identify biomarkers for reduced bone healing capacities in patients comorbid with type 2 diabetes mellitus

Johannes Schmidt¹, Vivien Wiltzsch¹, Daniela Sofia Bastos Dias², Jörg Lehmann¹, Jan Baumbach³, Patrina Su Ping Poh², Stefan Kalkhof*¹

¹Department of Preclinical Development and Validation, Fraunhofer Institute for Cell Therapy and Immunology IZI, ²Julius Wolff Institute of

Biomechanics and Musculoskeletal Regeneration, Charité Berlin, ³Institute for Computational Systems Biology, University of Hamburg, Germany

October 7-8

P10 Others

P10-010

Application of surface plasmon resonance in detection of rectal cancer

Tianyi Chen¹, Jen-Tsai Liu¹, Ching-Jung Chen*¹

¹University of Chinese Academy of Science, China

P10-011

Fabrication of photothermal film for deicing process based on gold nano-aggregate encapsulated yolk-shell structure

Suk Ho Bhang*¹

¹Sungkyunkwan University, Republic of Korea

P10-012

Development of hybrid skin model to evaluate UV-protective effects

Hiroki Masuhara², Koji Yamamoto¹, Yusuke Morita*¹

¹Department of Biomedical Engineering, Doshisha University, ²Graduate School of Life and Medical Sciences, Doshisha University, Japan

P10-013

The anti-tumor effect and mechanism of PDK4 in bladder cancer.

Eun Hye Lee¹, So Young Chun², Bo Hyun Yoon¹, Minji Jeon¹, Hyun Tae Kim¹, Jae-Wook Chung¹, Jun Nyung Lee¹, Tae Gyun Kwon¹, Bum Soo Kim¹, Yun-Sok Ha*¹

¹Kyungpook National University, ²Kyungpook National University Hospital, Republic of Korea

P10-014

Time-series correlation multivariate algorithm model to improve the accuracy of continuous glucose monitoring

Tianyi Sun¹, Rencai Liu¹, Ching Jung Chen*¹

¹University of Chinese Academy of Sciences, China

P10-015

Suppression of cancer cell migration by TGFβ activated fibroblasts in a co culture model of the tumor microenvironment

Ana Rita Morais Pires Dos Santos*¹

¹Korea University, Republic of Korea

P10-016

Submicron-structure surface chip apply in early cancer screening by surface plasmon resonance

Jialin Xin¹, Ching-Jung Chen¹, Jen-Tsai Liu*¹

¹University of Chinese Academy of Science, China

P10-017

Effect of vaginal sildenafil on the regeneration of refractory thin endometrium in thawed embryo transfer cycles: A case series

Sunyoung Kim¹, Jiyeon Han¹, Hyeryun Namkung¹, Sungwoo Kim¹, Seung-Yup Ku*¹

¹Seoul National University Hospital, Republic of Korea

P10-018

Multifunctional synthetic nanoenzyme embedded colorimetric paper biosensor for rapid detection of hydrogen peroxide

Jagannath Mondal¹, Vishnu Revuri³, Jeong Man An², Yong-kyu Lee*¹

¹Korea National University of Transportation, ²Hanyang University, ³Temple University, Republic of Korea

TERMIS-AP 2022

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New Chapter of Future Regenerative Medicine

SYIS Poster Sessions

SYIS Poster Sessions

Part 1

October 5-6

PS01 Tissue regeneration

PS01-001

The influence of fine dust in DEPs –inhalated diabetic wound models

Young Suk Choi¹, Hye Min An³, Young Koo Lee^{*2}

¹SoonChunHyang University, ²SoonChun Hyang University Bucheon Hospital, ³SoonChunHyang University, Republic of Korea

PS01-002

The effect of wound healing lead material using a streptozotocin-induced diabetic rat model exposed to fine dust

Hyemin An¹, Young Suk Choi¹, Young Koo Lee^{*2}

¹SoonChunHyang University, ²Soon ChunHyang University Bucheon Hospital, Republic of Korea

PS01-003

Effect of electric muscle stimulation on the improvement of deltoid muscle atrophy

Jeongkun Lee², Su Hyun Lee¹, Hyuntae Kim¹, Seok Won Chung^{*1}

¹Konkuk University Medical Center, ²Konkuk University, Republic of Korea

PS01-004

Targeted delivery of apoptotic cell-derived nanovesicles prevents cardiac remodeling and attenuates cardiac function exacerbation

Ju-Ro Lee¹, Bong-Woo Park², Hun-Jun Park², Yoon Ki Jo^{ung*1}

¹Korea Institute of Science and Technology, ²The Catholic University of Korea, Republic of Korea

PS01-005

Effective delivery of osteoinductive composite-spheroids laden hydrogel for bone tissue engineering

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PS01-006

Inhibitory effect of ginseng derived extracellular nanovesicles on osteoclast differentiation

Ji Hye Yoo¹, Jae Seo Lee², Haram Nah^{2,4}, Sung Jun Min², Seung Hyeon Kim^{2,4}, Ho-Jin Moon³, Il Keun Kwon^{*3}

¹Department of Biomedical Science and Technology, Graduate School, Kyung Hee University, 26 Kyugheedaero, Dongdaemum-gu, Seoul 02447,

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Dongdaemum-gu, Seoul 02447, Republic of Korea

PS01-007

Fabrication of spheroids using hydrogels with self- assembly system and bioreactor

Seung Yeon Lee¹, Jae Seo Lee², Haram Nah², Dong Nyoung Heo³, Il Keun Kwon^{*3}

¹Department of Biomedical Science and Technology, Graduate School, Kyung Hee University, 26 Kyugheedaero, Dongdaemum-gu, Seoul 02447, ²Department of Dentistry, Graduate School, Kyung Hee University,

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Dental Materials, School of Dentistry, Kyung Hee University, 26

Kyugheedaero, Dongdaemum-gu, Seoul 02447, Republic of Korea

PS01-008

Multi-functional membrane with bioactive layer and anti-adhesion layer for tendon regeneration

Seung Hyeon Cho¹, Min Ji Kim¹, Jin Ho Lee², Se Heang Oh^{*1}

¹Dankook University, ²Hannam University, Republic of Korea

PS01-009

Development of PCL-based 3D printing scaffold with unique morphology for bone regeneration

Min Ji Kim¹, June-Ho Byun³, Jin Ho Lee², Se Heang Oh^{*1}

¹Dankook University, ²Hannam University, ³Gyeongsang National University School of Medicine, Republic of Korea

PS01-010

Development of blood plasma-immobilized porous film with leaf-stacked structure as a hemostatic agent

Ye jin Song¹, Min Ji Kim¹, So Young Jeon³, Jin Ho Lee², Se Heang Oh^{*1}

¹Dankook University, ²Hannam University, Republic of Korea, ³Kyungpook National University Hospital, Republic of Korea

PS01-011

Fabrication and characterization of cell spheroid system containing porous microparticles

Jae Seok Park¹, Jin Ho Lee², Min Ji Kim¹, Yeoung Jo Jeoung², Se Heang Oh^{*1}

¹Dankook University, ²Hannam University, Republic of Korea

PS01-012

Development of bi-layer GBR membrane for simultaneous regeneration of bone and epithelium

Han Byeol Kim¹, Min Ji Kim¹, June Ho Byun³, Jin Ho Lee², Se Heang Oh^{*1}

¹Dankook University, ²Hannam University, ³Gyeongsang National University School of Medicine, Republic of Korea

PS01-013

PMMA-based bone cement to prevent adjacent vertebral fractures after vertebroplasty

ShinYoung PARK¹, MinJi Kim¹, SungWook Kang⁴, Sang Youn Song², DongHee Kim², JinHo Lee³, SeHeang Oh^{*1}

¹Dankook university, ²Gyeongsang National University Hospital, ³Hannam University, ⁴Korea Institute of Industrial Technology, Republic of Korea

PS01-014

Temperature sensitive polymer hydrogel patch with controllable release system for skin tissue regeneration

Jae Hwan Choi^{1,4}, Jae Seo Lee², Dong Nyoung Heo^{3,4}, Il Keun Kwon^{*3}

¹Department of Biomedical Science and Technology, Graduate School, Kyung Hee University, 26 Kyugheedaero, Dongdaemum-gu, Seoul 02447,

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Dongdaemum-gu, Seoul 02447, Republic of Korea, Republic of Korea

PS01-015

Vascular perfusion enabled by microchannel network in ischemic disease model using hydrogel with three- dimensional microtubular structures

Hye-Jeong Jang¹, Jung Bok Lee³, Hak-Joon Sung², Jeong-Kee Yoon^{*1}

¹Chung-Ang University, ²Yonsei University College of Medicine,
³Sookmyung Women's University, Republic of Korea

PS01-016

Tailoring the bioactivity of a cell-derived extracellular matrix (ECM)-based material to exhibit superior pro-angiogenic and osteogenic properties

Lih Ying SHIN¹, Ho-Ying WAN¹, Dan WANG¹, Anna BLOCKI^{*1}

¹Institute for Tissue Engineering and Regenerative Medicine, The Chinese University of Hong Kong

PS01-017

Mesenchymal stromal cell exosomes modulate macrophage activities to promote joint repair in osteoarthritis

Kristeen Ye Wen Teo¹, Shipin Zhang¹, Sai Kiang Lim^{2,3}, Wei Seong Toh^{*1,4,5,6}

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²Institute of Molecular and Cell Biology, Agency for Science, Technology and Research (A*STAR), Singapore, ³Department of Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore,

⁴Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ⁵Tissue Engineering Program, Life Sciences Institute, National University of Singapore, Singapore, ⁶Integrative Sciences and Engineering Program, NUS Graduate School, National University of Singapore

PS01-018

Enhancement of muscle tissue regeneration supplemented with bioactive components

Hanjun Hwangbo², JiUn Lee¹, Hyeongjin Lee¹, JaeYoon Lee¹, WonJin Kim¹, Youngwon Koo¹, JuYeon Kim¹, GeunHyung Kim^{*1}

¹Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), 16419, Suwon, ²Sungkyunkwan university, Republic of Korea

PS01-019

The bone regenerative potential of RANTES/CCL5 in the calvarial defects of rat

Chang sung Kim^{*1}, Garam Jung², Young woo Song²

¹Department of Periodontology, Research Institute for Periodontal Regeneration, College of Dentistry, Yonsei University, ²Department of Periodontology, Oral science research center, College of Dentistry, Yonsei University, ²Department of Periodontology, Research Institute for Periodontal Regeneration, College of Dentistry, Yonsei University, Republic of Korea

PS01-020

Aligned alginate based cell-laden nanofibrous produced by cell electrospinning for corneal stromal regeneration

SuHyeok Lee¹, Hyeongjin Lee¹, SooJung Chae¹, Dongyun Kim¹, Hanjun Hwangbo¹, Amin Orash Mahmoudsalehi¹, GeunHyung Kim^{*1}

¹Sungkyunkwan University, Republic of Korea

PS01-022

Fabrication of mechanically reinforced alginate/PCL scaffolds for hard tissue engineering

MoHan Pei¹, Hyeongjin Lee¹, JaeYoon Lee¹, SooJung Chae¹, JuYeon Kim¹, Dongyun Kim¹, Hanjun Hwangbo¹, SeoYul Jo¹, GeunHyung Kim^{*1}

¹Sungkyunkwan University, Republic of Korea

PS01-023

Novel concept of guided bone (regeneration GBR) using collagen membrane with rhBMP-2

Narae Jung¹, Jae-han Park¹, Young-bum Park^{*1}

¹Yonsei Univ, Republic of Korea

PS01-024

Therapeutic potential of multiple cycles collection of conditioned medium from different cell sources on wound healing model: In vitro study

Nur Izzah Md Fadilah¹, Mh Busra Fauzi², Manira Maarof^{*1}

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PS01-025

A biphasic construct for osteochondral complex using modified transwell model

Chengchong Ai¹, James Goh^{*1}

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PS01-026

Effects of (glycosaminoglycan GAG) content in donor cartilage extracellular matrix on the functional properties of osteochondral allograft evaluated by μ CT non-destructive analysis

YONGJUN JIN¹, Do Young Park¹, Sujin Noh⁵, Dong Il Shin⁴, Hee-Woong Yun³, Byong Hyun Min^{*2}

¹Department of Orthopedic Surgery, School of Medicine, Ajou University,

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¹Department of Orthopedic Surgery, School of Medicine, Ajou University, ²Department of Molecular Science and Technology and Department of Orthopedic Surgery, School of Medicine, Ajou University, ³Cell Therapy Center, Ajou Medical Center, ⁴Department of Molecular Science and Technology, Ajou University, Republic of Korea, ⁵Department of Biomedical Sciences, Graduate School of Ajou University

PS01-027

A transplantable pre-vascularized tissue platform by using a multi-material microfluidic 3D bioprinting method

Donghwan Kim¹, Uijung Yong¹, Yoo-mi Choi¹, Daekeun Kim¹, Jinah Jang^{*1}

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PS01-028

Exosome-encapsulating tissue-adhesive patch for diabetic wound regeneration

Seung Yeop Han¹, Eun Je Jeon¹, Soohwan An¹, Young Seok Song¹, Seung-Woo Cho^{*1}

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October 5-6

PS02 Biomaterials

(scaffold, 3D printing, fabrication, etc.)

PS02-001

Dendritic cell-derived nanovesicles for targeted delivery of immune checkpoint inhibitors to improve therapeutic efficacy and prevent side effects

Mungyo Jung¹, Mikyung Kang¹, Byung-Seok Kim¹, Jihye Hong¹, Cheesue Kim¹, Choong-Hyun Koh¹, Garam Choi¹, Yeonseok Chung¹, Byung-Soo Kim^{*1}

¹Seoul National University, Republic of Korea

PS02-002

Human hair keratin gradient hydrogels for skin regeneration

Marin Yee Zhen Lin^{*1,2}, Ng Kee Woei^{1,3,4}

¹School of Materials Science and Engineering, Nanyang Technological University, Singapore, ²Institute for Health Technologies, Interdisciplinary Graduate Programme, Nanyang Technological University, Singapore, ³Environmental Chemistry and Materials Centre, Nanyang Environment and Water Research Institution, Singapore, ⁴Center for Nanotechnology and

Nanotoxicology, Harvard T.H. Chan School of Public Health, Harvard University, United States, Singapore

PS02-004

Challenges in mixing of multiple components in nanocomposite bioink for 3D bioprinting

SHIVA TAHERI³, Mst Rita Khatun¹, Hyong-Uk Ham¹, Gounhanul Shin¹, Amitava Bhattacharyya⁴, Insup Noh², Insup Noh^{*2}

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PS02-005

Even tissue formation by uniform cell distribution during 3D bioprinting

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PS02-006

Kombucha-cultured nanocellulose for 3D bioprinting

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PS02-007

Isolation of colon cancer cells using membrane filtration method

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PS02-008

Photo-crosslinked gelatin-methacryloyl hydrogel strengthened with in situ formed nanoparticles for regeneration of rabbit calvarial defects

Da-Na Lee¹, Jin-Young Park¹, Young-Wook Seo¹, Xiang Jin¹, Jongmin Hong², Amitava Bhattacharyya², Insup Noh², Seong-Ho Choi^{*1}

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PS02-009

Fabrication of cell scaffold capable of sustained oxygen release by hydroxyapatite formation on calcium peroxide

Daisuke Tomioka¹, Michiya Matsusaki^{*1}

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PS02-010

Three-dimensionally printed biphasic calcium phosphate blocks with different pore diameters for regeneration in rabbit calvarial defects

Young-Wook Seo¹, Jin-Young Park¹, Da-Na Lee¹, Xiang Jin¹, Jae-Kook Cha¹, Jeong-Won Paik¹, Seong-Ho Choi^{*1}

¹Department of periodontology, Research institute of periodontal regeneration, Yonsei University College of Dentistry, Seoul, Korea, Republic of Korea

PS02-011

Design and fabrication of bone scaffolds with the auxetic structure

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PS02-012

Cell laden gelatin hydrogel with carbodiimide or genipin-crosslinked for glottic insufficiency: An in vitro study

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PS02-013

Application of bacterial cellulose membrane in cancer cell isolation

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PS02-014

Cytocompatibility of corneal cells towards ovine collagen type 1 hydrogel

Nur Amalia Ra'oh², Mohd Fauzi Mh Busra¹, Rohaina Che Man⁵, Muhammad Ramdzan Buyong⁴, Norzana Abd Ghafar⁶, Min Hwei Ng¹, Wan Haslina Wan Abdul Halim^{*3}

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PS02-015

Design, fabrication, and assessment of a robust modified-honeycomb-structure scaffold with enhanced interconnectivity for bone tissue engineering

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PS02-016

Bioinspired peptide hydrogels for controlled delivery of viral vectors to reprogram endogenous reactive astrocytes to neurons in acquired brain injury

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PS02-017

Development and evaluation of freeze dried and electrospun scaffolds from chitosan, gelatin and nano ceramic phosphate for bone tissue engineering

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PS02-018

Investigation of the potential for osteochondral tissue regeneration via a novel biphasic 3D printed silk reinforced scaffold

Thomas Braxton^{*1}, Khoon Lim², Cesar Alcalá-Orozco², Habib Joukhdar³, Jelena Rnjak-Kovacina³, Tim Woodfield², Lin-Hua Jiang⁵, David Wood¹, Claire Brockett⁴, Xuebin Yang¹

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PS02-019

A novel biofabrication process to generate vascularised 3D bioprinted constructs to support islet transplantation for the treatment of type 1 diabetes

Anna Kulaga^{*1}, Zhilian Yue¹, Xiao Liu¹, Patrick T. Coates², Chris Drogemuller², Gordon Wallace¹

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PS02-020

3D printed natural hydroxyapatite-embedded titanium implants promoting osseointegration

Juo Lee¹, Sungmin Lee¹, Jungsil Kim¹, Hoon Seonwoo^{*1}

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PS02-021

Development of 3D printable calcium phosphate cement based on cockle shell powder/ β -TCP

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PS02-022

Natural killer cell membrane coated gold nanoparticles for cell membrane immunotherapy

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PS02-023

The fabrication of highly porous cell-laden structure

JIUN LEE¹, SeoYul Jo¹, Hyeongjin Lee¹, WonJin Kim¹, Young Won Koo¹, Hanjun Hwangbo¹, GeunHyung Kim^{*1}

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PS02-024

Collagen-based bioink for 3D bioprinting to obtain mechanically enhanced porous 3D cell-laden structure

YoungWon Koo¹, Hyeongjin Lee¹, WonJin Kim¹, JiUn Lee¹, SeoYul Jo¹, GeunHyung Kim^{*1}

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PS02-025

Fabrication of 3D cell-constructs using photocrosslinkable bioink

SooJung Chae¹, Hyeongjin Lee¹, Dongyun Kim¹, Hanjun Hwangbo¹, Amin Orash Mahmoudsaiehi¹, SeoYul Jo¹, Mohan Pei¹, GeunHyung Kim^{*1}

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PS02-026

Development of a novel hemostatic biomaterial using keratin-conjugated fibrinogen for oral tissue regeneration

Hyeon Jeong Kang¹, Seong Yeong An², Woo Gyeong Kim², So Yeon Kim³, Yu-shik Hwang^{*1}

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²KERAMEDIX, Republic of Korea, ³College of Health & Medical Sciences, Cheongju University, Republic of Korea

PS02-027

Topical bioadhesive hemostatic agents for bleeding site care at visceral surgeries

Jaeyun Lee², Eun Jin Kim¹, Ki Joo Kim¹, Jong Won Rhie¹, Kye Il Joo³, Hyung Joon Cha^{*2}

¹Department of Plastic and Reconstructive Surgery, The Catholic University of Korea, Republic of Korea, ²Department of Chemical Engineering, Pohang University of Science and Engineering, Republic of Korea, ³Division of Chemical Engineering and Materials Science, Ewha Womans University, Republic of Korea

PS02-028

Application of cartilage extracellular matrix for enhancing the therapeutic efficacy of rheumatoid arthritis drug

JeongWoo Seo¹, SungHan Jo¹, SeonHwa Kim¹, Byeong Hoon Choi¹, SangHyug Park^{*1}

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PS02-029

Functional skeletal muscle regeneration using muscle mimetic tissue fabricated by microvalve-assisted coaxial 3D bioprinting

Hanna Lee¹, Soon Hee Kim¹, Ji Seung Lee¹, Young Jin Lee¹, Ok Joo Lee¹, Olatunji Ajiteru¹, Md. Tipu Sultan¹, Chan Hum Park^{*1}

¹Nano-Bio Regenerative Medical Institute, College of Medicine, Hallym University, and Hallymdaehak-gil, Chuncheon, Gangwon-do 24252, Republic of Korea

PS02-030

Double layered conductive nanoparticles for bioelectronics surface using mussel-derived protein

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PS02-031

Hybrid bio 3D printing technology using photocurable bio ink / poly-caprolactone for cartilage regeneration

Ji Won Heo¹, Ji Seung Lee¹, Hae Sang Park², Hanna Lee¹, Chan Hum Park^{*1}

¹Nano-Bio Regenerative Medical Institute, College of Medicine, Hallym University, 1 Hallymdaehak-gil, Chuncheon, Gangwon-do 24252, Republic of Korea, ²Department of Otorhinolaryngology-Head and Neck Surgery, Chuncheon Sacred Heart Hospital, School of Medicine, Hallym University, Chuncheon 24252, Republic of Korea, Republic of Korea

PS02-032

Fabrication of graphene oxide composite ultra-strong stretchable hydrogel with high conductivity and biocompatibility

Ojun Kwon¹, Young Jin Lee¹, Md Tipu Sultan¹, Olatunji Ajiteru¹, Chan Hum Park*¹

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PS02-033

3D printed fish-derived extracellular matrix scaffolds for bone tissue engineering

SeoYul Jo¹, JiUn Lee¹, Hyeongjin Lee¹, WonJin Kim¹, Young Won Koo¹, Hanjun Hwangbo¹, GeunHyung Kim*¹

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PS02-034

Fabrication and characterization of a myrrh hydrocolloid dressing for dermal wound healing

Jang Min Kim¹, Ok Joo Lee¹, Ji Seung Lee¹, Hanna Lee¹, Chan Hum Park*¹

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PS02-035

Multi-functional microwell array platform for spontaneous glioblastoma spheroid formation and anticancer drug screening

Fu-Nan Ju¹, Kwang-Ho Lee¹, Cheol-Hwi Kim¹, Tae-Hyung Kim*¹

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PS02-036

Matrix stiffness dependent nuclear transport of STAT6 determines M2 activation of macrophages

Jeong-Ki Kim¹, Dong-Hwee Kim*¹

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PS02-037

Effect of silk fibroin/ nano-hydroxyapatite composite on immune responses

Kallista Wong*¹

¹National University of Singapore, Singapore

PS02-038

Sprayable Ti3C2 MXene hydrogel for wound healing and skin cancer therapy

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PS02-039

3D bioprinting LEGO system to construct large 3D-tissues with complex property

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PS02-040

Nanofilms constructed by cation-dipole interaction to prevent cell migration for cell compartmentalization in 3D tissues

Jinfeng Zeng¹, Michiya Matsusaki*¹

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PS02-041

SUN1-mediated nuclear tension determines nuclear wrinkling in progerin expressing cells

Juhyeon Jo¹, Dong-Hwee Kim*¹

¹Korea University, Republic of Korea

PS02-042

Development of elastin-like protein derived from the domain of human elastin

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PS02-043

Cellulose-based tissue adhesive hydrogels for hemostatic application

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PS02-044

Fabrication of perfusable and free-form In vitro vascular model using a coaxial nozzle

Min-Gyun Kim¹, Seon-Jin Kim¹, Seung-Won Kang¹, Seo-Yeon Kim¹, Sang-Gyun Nam¹, Hee-Gyeong Yi*²

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PS02-045

Neurotransmitter-modified fibrous artificial 3D constructs for effective muscle regeneration

Kyoungryong Kim¹, Mikyung Shin*¹

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PS02-046

Self-assembly small diameter vasculature via dragging 3D printing technique

Jae-Seok Kim¹, Hun-Jin Jeong³, Hyoryung Nam², Sung Keon Cho², So-Jung Gwak¹, Hyun-Ha Park¹, Hyung Woo Kim¹, Kyoung Duck Seo¹, Young-Sam Cho¹, Jinah Jang², Seung-Jae Lee*¹

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PS02-047

Development of a simple multi-functional unidirectional freezing platform to engineer aligned scaffolds for tissue engineering

Habib Joukhdar*¹, Zac Och¹, Hien Tran¹, Scott Heberton¹, Khoon Lim², Megan Lord¹, Jelena Rnjak-Kovacina¹

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PS02-048

Selective modulation of single cell migration via double-strand DNA rupture force

Seong-Beom Han¹, Dong-Hwee Kim*¹

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PS02-049

Fabrication and characterisation of hybrid nanocollagen- gelatin thermoresponsive hydrogel for skin tissue engineering application

Samantha Lo¹, Ebrahim Mahmoudi², Manira Maarof¹, Mh Fauzi Mh Busra*¹

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Chemical and Process Engineering, The National University of Malaysia (Universiti Kebangsaan Malaysia), Malaysia

PS02-050

Decellularised human umbilical arteries: exploring its potential as a readily available off-the-shelf coronary graft

Jun Wei Heng¹, Muhammad Da'in Yazid⁵, Mohd Faizal Ahmad⁴, Mohd Ramzisham Abdul Rahman³, Nadiyah Sulaiman^{*2}

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PS02-051

Dermal extracellular matrix-derived nanoparticles improve the biological relevance of gelatine bioinks for future wound healing applications

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PS02-052

The development of multifunctional nerve guidance conduit using milk derived protein for peripheral nerve regeneration

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PS02-053

Hydroxy-conjugated bifacial scaffolds for localized drug delivery system

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PS02-054

Engineering autologous vascularized thrombus implants for enhancing cutaneous wound healing

Su Hyun Jung¹, Seyong Kwon¹, Bong Hwan Jang¹, Sung Jin Park¹, Joo Hun Kang^{*1}

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PS02-055

Fabrication of phycocyanin based fibrous membrane coated fish collagen for bone regeneration

Se-Chang Kim¹, Seong-Yeong Heo⁴, Gun-Woo Oh³, Ji-Won Jeong¹, Won-Kyo Jung^{*2}

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PS02-056

A bio-adhesive hyaluronic acid hydrogel for pH-versatile biomedical applications

SooHwan An¹, Eun Je Jeon¹, Seung Yeop Han¹, Jihoon Jeon¹, Mi Jeong Lee¹, Sooyeon Kim¹, Mikyung Shin², Seung-Woo Cho^{*1}

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PS02-057

Acellular matrix film incorporating phlorotannins from Ecklonia cava suppressed post-implantation inflammatory responses

Tae-Hee Kim¹, Seong-Yeong Heo⁵, Gun-Woo Oh⁴, Won Sun Park³, Il-Whan Choi², Hyun Wook Kang¹, Huyn-Woo Kim¹, Young-Mog Kim¹, Sung-Han Jo¹, Sang-Hyug Park¹, Won-Kyo Jung^{*1}

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PS02-058

Fish collagen/PCL nanofibrous scaffolds with cross-linked chitooligosaccharides for full-thickness wound healing

Dong-Joo Park¹, Pathum Chandika¹, Gun-Woo Oh³, Seong-Yeong Heo², Tae-Hee Kim¹, Min-Sung Kim¹, Seung-Hee Moon¹, Won-Kyo Jung^{*1}

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PS02-059

Ovine collagen type-I (OTC-I) biomatrix integrated with antibacterial coating for rapid treatment in diabetic wound care management

Nor Amirrah Ibrahim¹, Mohd Farhanulhakim Mohd Razip Wee², Mh Busra Fauzi^{*1}

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PS02-060

Fabrication of antioxidant and anti-inflammatory hydrogel based on fish skin gelatin/oxidized hyaluronate for accelerated wound healing

Dong-Joo Park¹, Seung-Hee Moon¹, Won-Kyo Jung^{*1}

¹Pukyong National University, Republic of Korea

PS02-061

Fabrication of injectable iron(III) crosslinked hyaluronic acid/pectin hydrogel with antimicrobial activities

Nam-Gyun Kim¹, Won-Kyo Jung^{*1}

¹Pukyong National University, Republic of Korea

PS02-062

Characterisation of native tissue and development of multiphasic scaffolds for engineering of bone-ligament interface

Ilayda Karadag^{*1}

¹University of Oxford, United Kingdom

PS02-063

Decellularized plant and fungal-based scaffolds for the *in vitro* production of bovine meat

Hyunjin Kim¹, Rakesh Bhaskar¹, Kannan Badri Narayanan¹, Soyeon Won¹, Abdulrahman Sharwani¹, Sungsoo Han^{*1}

¹Yeungnam University, Republic of Korea

PS02-064

3D bioprinting of islet-like aggregates using dual-crosslinked hydrogel with promoted biofunctionality and enhanced shape stability

Yeonggwon Jo¹, Hyoryung Nam¹, Jinah Jang^{*1}

¹Pohang University of Science and Technology (POSTECH), Republic of Korea

PS02-065

Dual controlled photocrosslinkable and photodegradable gelatin-ased hydrogel

Min Chun Tsai¹, Lo Yuan Liu¹, Ying Chieh Chen^{*1}

¹Department of Materials Science and Engineering, National Tsing Hua University, Chinese Taipei

PS02-066

In situ forming and copper-containing hydrogel as a controlled nitric oxide-releasing scaffold for tissue engineering

Simin Lee¹, Dieu Linh Tran¹, Thi Phuong Le¹, Dong Hwan Oh¹, Ki Dong Park^{*1}

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PS02-067

3D printing of biohybrid electrical stimulation platform to promote insulin secretion of pancreatic β cell

Jihwan Kim¹, Uijung Yong¹, Jinah Jang^{*1}

¹POSTECH, Pohang, Gyeongbuk, South Korea, Republic of Korea

PS02-068

Enzyme-based on-demand photo-cross-linkable hydrogel for image-guided vascular embolization

Han Jungmin¹, Kim Suhwan^{*1}

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PS02-069

Development of light-blocking nanofiber membrane for a three-dimensional *in vitro* angiogenesis model capable of real-time selective imaging

Byeong-Ung Park¹, Dong Sung Kim³, Hong Kyun Kim^{*2}

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PS02-070

Development of silk-based cultured meat scaffold with aligned fibrous texture

Xuan Hao Tan^{*1}, Reuben Chua¹, James Goh Cho Hong¹

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PS02-071

Harnessing the *in vivo* inflammatory response for tissue engineering

Li Yenn Yong^{*1}, Shahow Shawk¹, Jared McSweeney¹, Jonny Blaker¹, Jason Wong¹, Brian Derby¹

¹University of Manchester, United Kingdom

October 5-6

PS03 Delivery systems

(drug, biomolecules, active ingredient, etc.)

PS03-001

A senolytic-eluting coronary stent for the prevention of in-stent restenosis

Cheesue Kim¹, Seul-Gee Lee², Songhyun Lim¹, Mungyo Jung¹, Sung Pil Kwon¹, Jihye Hong¹, Mikyung Kang¹, Hee Su Sohn¹, Seokhyeong Go¹, Sangjun Moon¹, Seung-Jun Lee², Jung-Sun Kim², Byung-Soo Kim^{*1}

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PS03-003

Genetic fusion of a human serum albumin-specific protein binder significantly increases the biological functionality and blood circulation time of human interleukin-15

Jin-Ho Park¹, June-Ho Byun^{*1}

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PS03-004

Tumor intracellular microenvironment-responsive nanoparticles for magnetically targeted chemotherapy

Shameer Pillarisetti¹, Kang Moo Huh², In-Kyu Park^{*1}

¹Department of Biomedical Sciences, Chonnam National University Medical School, 264, Seoyang-ro, Jeollanam-do, 58128, Republic of Korea., ²Department of Polymer Science and Engineering, Chungnam National University, 99 Daehakro, Yuseong-gu, Daejeon, 34134, Republic of Korea

PS03-005

Capsulation technique-based intercellular organelle transfer for osteoarthritis therapy

Hye-Ryoung Kim¹, Hye Jin Kim¹, Sujin Lee¹, Hui Bang Cho¹, Sujeong Lee¹, Keun-Hong Park^{*1}

¹CHA University, Republic of Korea

PS03-006

Fabrication of a polymeric inhibitor of membrane-type co-localized enzymes for synergistic inhibition of cancer cell metabolism

Yuki Koba¹, Masahiko Nakamoto¹, Michiya Matsusaki^{*1}

¹Osaka University, Japan

PS03-007

Cell-favorable protein-based adhesive microcapsules for NK cells-mediated cancer immunotherapy

Hyun Sun Choi¹, Eunseo Kim¹, Hyomin Lee¹, Hyung Joon Cha^{*1}

¹POSTECH, Republic of Korea

PS03-008

Click chemistry complex drug delivery system using tissue extracellular matrix for the anti-tumor therapy

Sung-Han Jo¹, Muhammad Gulfam², Byeong-Hoon Choi¹, RAISSA MUNDERERE¹, Ye-Jin Kim¹, Kwon Taek Lim², Sang-Hyug Park^{*1}

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PS03-009

Transdermal delivery of hyaluronate based upconverting nanoparticle

Hye Eun Choi¹, Ki Su Kim^{*1}

¹Pusan National University, Republic of Korea

PS03-010

Doxycycline-eluting core-shell type nanofiber-covered trachea stent for inhibition of cellular metalloproteinase and its related fibrotic stenosis

Ngoc-Thuan Truong¹, Phuong-Hoa Tran¹, Sung-Min Jeon², Duy-Binh Tran³, Su-Guen Yang^{*2}

¹Department of Biomedical Science, BK21 FOUR Program in Biomedical Science and Engineering, Inha University College of Medicine, Incheon 22212, Korea, ²Department of Biomedical Science, Translational Research center, Inha University Hospital, Incheon, Korea, ³Inha Institute of Aerospace Medicine, Inha University College of Medicine, Incheon 22332, Korea, Republic of Korea

PS03-011

Improved properties of polymeric micelles via hydrophobic core-clustering of superparamagnetic iron oxide nanoparticles

Su-Geun Yang¹, Kyung-Ju Shin¹, Yixin Jiang¹, Su-Geun Yang^{*1}

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PS03-012

An organ-on-a-chip approach for efficient phage display biopanning under physiological conditions

Jeong-Won Choi¹, Kyungha Kim¹, Chun Gwon Park², Taejoon Kwon¹, Tae-Eun Park^{*1}

¹Ulsan National Institute of Science and Technology, ²Sungkyunkwan University, Republic of Korea

PS03-013

Fabrication of dual-drugs loading liposomes stimulated by physical activation

Sujeong Lee¹, Hye Jin Kim¹, Sujin Lee¹, Hui Bang Cho¹, Hye-Ryoung Kim¹, Keun-Hong Park^{*1}

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October 5-6

PS04 Stem cell engineering

(cell therapy, developmental biology, etc.)

PS04-002

TIMP1 enhances survival of transplanted adult stem cell spheroids in murine critical limb ischemia model

Jung-Kyun Choi¹, Haeun Chung¹, Seung-ja Oh¹, Sang-Heon Kim^{*1}

¹KIST (Korea Institute of Science and Technology), (UST University of Science and Technology), Republic of Korea

PS04-003

Development of recombinant transcription factor proteins for direct conversion of human dermal fibroblasts into osteoblasts

Manho Kim¹, Ju Hyun Park^{*1}

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PS04-004

3D spheroids of mesenchymal stem cells attenuate neuropathic pain mediated by chronic constriction injury in mice

Nayeon Lee¹, Jae Kyung Lim¹, Jae Ho Kim^{*1}

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PS04-005

Glioblastoma recurrence by neurotransmitters from abnormal neuronal firing via electrical stimulation

Ji Yeon Lee¹, Bon Il Koo¹, Trang Huyen Le-Kim¹, Yoon Sung Nam^{*1}

¹Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

PS04-006

Identification of mesenchymal stem cell-specific surface markers

An Nguyen-Thuy Tran^{1,2}, Min Ji Lee¹, Ha Yeong Kim¹, Soo Yeon Jung¹, Han Su Kim^{*1,2}

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PS04-007

Prevention of diet-induced obesity by adipose tissue browning using extracellular vesicles from stem cells during beige adipogenic differentiation

YEEUN YUN¹, Seung Yeop Youn¹, Yong Woo Cho^{*1}

¹Hanyang Univ., Republic of Korea

PS04-008

Human neural progenitor cell differentiation into spiral ganglion neurons for sensorineural hearing loss

Nathaniel Carpena³, Celine Abueva¹, So-Young Chang¹, Ji-Eun Choi², Jae Yun Jung², Min Young Lee^{*4}

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Otorhinolaryngology- Head & Neck Surgery, College of Medicine, Dankook University, Cheonan, South Korea, ³Dankook University, ⁴Beckman Laser Institute Korea,

PS04-010

Three-dimensional environment improves efficiency of chemically-induced direct cardiac reprogramming

Seung Ju Seo², Jeong Hyun Heo¹, Yoonhee Jin^{*1}

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PS04-011

Blood outgrowth endothelial cells (BOECs) in re-endothelialization of human saphenous veins (hSV): An ex vivo model

Atiqah Haron¹, Ubashini Vijakumaran¹, Muhammad Dain Yazid¹,

Mohd Ramzisham Abdul Rahman², Hairulfaizi Haron², Nur Ayub Md Ali², Muhammad Ishamuddin Ismail², Nariah Sulaiman^{*1}

¹UKM, ²PPUKM, Malaysia

PS04-012

Mesenchymal stem cells can promote the healing of the ocular surface by corneal epithelial cell regeneration in the alkali burn model of the rabbit

Jin Kim¹, Yoonkyung Park¹, Whanseon Lee¹, JeongHye Sunwoo¹,

Jee Won Han¹, Jae Yong Kim¹, Hungwon Tchah¹, Hun Lee^{*1}

¹Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Republic of Korea

PS04-013

Designing engineered stem cells hybrid spheroids for inflammatory disease

Dinesh Chaudhary¹, Tien Tiep Nguyen², Nhu Nam Nguyen¹, Jee-Heon Jeong^{*1}

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October 5-6

PS05 Organ-mimetic platforms (organoid, organ-on-a-chip, etc.)

PS05-001

Engineering hair follicle organoids through microenvironmental reprogramming

Tatsuto Kageyama¹, Junji Fukuda^{*2}

¹Kanagawa Institute and Industrial Science and Technology, ²Yokohama National University, Japan

PS05-002

Zika virus infection accelerates Alzheimer's disease phenotypes in brain organoids

Hee-Yeong Kim¹, Seung-Eun Lee¹, Kyung-Sun Kang^{*1}

¹Seoul National University, Republic of Korea

PS05-004

Development of in vitro 3D unidirectional cerebral region circuit analytic platform by controlling the growth rate of neurites

Kyeong Seob Hwang¹, Hyun Wook Kang¹, Nakwon Choi¹,

Jongbaeg Kim², Hong Nam Kim^{*1}

¹KIST, ²Yonsei University, Republic of Korea

PS05-005

Physiomimetic bioprinting of stem cell-derived human pancreatic islet-like cellular aggregates-vascular platform for studies of diabetic diseases

Myungji Kim¹, Seungyeon Cho¹, Dong Gyu Hwang¹, Jinah Jang^{*1}

¹POSTECH, Republic of Korea

PS05-006

Aging of the blood-brain barrier (BBB) via reactive oxygen species (ROS) stimulationEun U Seo¹, Hong Nam Kim*¹¹KIST, Republic of Korea

PS05-007

Microrheological system for hepatic function enhancement of human liver organoidsJae Hee Byeon¹, Gi Seok Jeong*²¹University of Ulsan, ²Asan Medical Center, Republic of Korea

PS05-008

3D microfluidic meningeal lymphatic vascular system to study age-related pathological effects of cerebrospinal fluidJiyeon Ryu¹, Tae-eun Park*¹¹UNIST, Republic of Korea

PS05-009

A microphysiological system reproducing obesity-associated adipose tissue inflammationHeejeong Yoon¹, Tae-Eun Park*¹¹UNIST, Republic of Korea

PS05-010

Analysis of metastatic organotropism in breast cancer cells using a microphysiological systemsHeejeong Yoon¹, Ju-Hae Choi¹, Joo H. Kang¹, Tae-Eun Park*¹¹UNIST, Republic of Korea

PS05-011

Generation of 3D innervated skeletal muscle modeEunseon Jeong¹, Suah Choi¹, Junghoon Kim¹, Seung-Woo Cho*¹¹Yonsei Univ., Republic of Korea

PS05-013

Cortical-blood vessel assembloids exhibit Alzheimer's disease pathologies by activating glia after SARS-CoV-2 infectionNam Gyo Kim¹, Dasom Kong¹, Ki Hoon Park², Young Bong Kim², Kyung-Sun Kang*¹¹Seoul National University, ²Konkuk University, Republic of Korea

PS05-014

Wnt-activating human skin organoid model of atopic dermatitis induced by Staphylococcus aureus and its protective effects by Cutibacterium acneMin-ji Kim¹, Song-Yi Jung¹, Kyung-Sun Kang*¹¹Seoul National University, Republic of Korea

PS05-015

Endometrium organoid as an in vitro model for female reproductive diseasesEunju Park¹, Dongyun Kang¹, Su Min Kwak¹, Yoonhee Jin*²¹Yonsei University College of Medicine, ²Department of Physiology, Yonsei University College of Medicine, Republic of Korea

PS05-016

Development of functional hepatic organoids with liver-specific microenvironmentsSu Kyeom Kim¹, Sewon Park¹, Seung-Woo Cho*¹¹Yonsei University, Republic of Korea

PS05-017

Human stomach microphysiological system for modelling Helicobacter Pylori pathogenesisHye-Jin Jeong¹, Joo H. Kang¹, Seong-Ho Kong², Tae-Eun Park*¹¹Ulsan National Institute of Science and Technology, ²Seoul National University College of Medicine, Republic of Korea

Part 2

October 7-8

PS01 Tissue regeneration

PS01-029

Fabrication of a cell-aggregates loaded hepatic tissue via cell-printing systemWonJin Kim¹, Hyeongjin Lee¹, JiUn Lee¹, SooJung Chae¹, JuYeon Kim¹, Pei Mohan¹, GeunHyung Kim*¹¹Sungkyunkwan University, Republic of Korea

PS01-030

Gelatin incorporation in VEGF-loaded PVA-Tyramine hydrogels to enhance cellular interaction and vascular infiltrationAlessia Longoni*¹, Gretel Major¹, Pau Atienza-Roca¹, Lyn Wise¹, Gary Hooper¹, David Kieser¹, Tim Woodfield¹, Jelena Rnjak-Kovacina^{3,2}, Khoon Lim¹¹University of Otago, ²UNSW Sydney, New Zealand

PS01-031

Microfluidic chip development for vascularized bone marrow nicheSeoyeon Kim¹, Jung Hun Kim¹, Nathaniel Whang³, Hwan Kim*²¹Seoul National University, Korea National University of Transportation, ²Korea National University of Transportation, ³Seoul National University, Republic of Korea

PS01-032

Polycaprolactone/gelatin/polydeoxyribonucleotides nanofiber for wound healing applicationTae-Hee Kim¹, Se-Chang Kim¹, Pathum Chandika¹, Jin-Bok Jang¹, Ji-Won Jeong¹, Won-Kyo Jung*¹¹Pukyong National University, Republic of Korea

PS01-033

Triple cross-linked methacrylate kappa-carrageenan/poly (vinyl alcohol)/chitosan oligosaccharide wound dressing hydrogel for wound healing applicationNam-Gyun Kim¹, Pathum Chandika¹, Fazlurrahman Khan¹, Young-Mog Kim¹, Seong-Yeong Heo³, Gun-Woo Oh⁴, Min-Sung Kim², Won-Kyo Jung*¹¹Pukyong national university, ²Korea Conformity Laboratories, ³Korea Institute of Ocean Science & Technology, ⁴National Marine Biodiversity Institute of Korea, Republic of Korea

PS01-034

Topographical regulation for local bone regeneration in type 1 diabetes mellitus: In-vivoMIN GUK KIM¹, HYEJI EOM¹, DO-YEON KIM², CHAN HO PARK*¹¹Department of Dental Biomaterials, School of Dentistry, Kyungpook National University, ²Department of Pharmacology, School of Dentistry, Kyungpook National University, Republic of Korea

PS01-035

The effect of nanohydroxyapatite incorporated with micro RNA 21 in regulating osteogenesisReva Subramaniam², Law Jia Xian¹, Ekram Alias¹, Ng Min Wei*¹¹Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, ²University Kebangsaan Malaysia, Malaysia

PS01-036

Anti-senescence ion-delivering nanocarrier for recovering therapeutic properties of long-term-cultured human adipose-derived stem cellsYeong Hwan Kim¹, Suk Ho Bhang*¹¹Sungkyunkwan University, Republic of Korea

PS01-037

Mesenchymal stem cell and hydrogel treatment of oral ulcer

Hyun Seok Ryu², Celine Abueva¹, Andrew Padalhin¹, So Young Park¹, Hayoung Lee², Phil-sang Chung³, Seung Hoon Woo^{*3}

¹Dankook institute of medicine and optics, Dankook university, ²Interdisciplinary Program for Medical Laser, College of Medicine, Dankook University, ³Department of Otorhinolaryngology-Head and Neck Surgery, Dankook University College of Medicine, Republic of Korea

PS01-038

Salivary gland stem cell-derived exosomes produced by a Wnt-loaded microwell culture accelerates the recovery from salivary gland dysfunction in murine salivary gland damage models

Jae-Min Cho¹, SuJeong Ahn², Yeo-Jun Yoon¹, Dohyun Kim², Won-Gun Koh², Jae-Yol Lim^{*1}

¹Department of Otorhinolaryngology, Gangnam Severance Hospital, Yonsei University College of Medicine, ²Department of Chemical and Biomolecular Engineering, Yonsei University, Republic of Korea

PS01-039

Secretome of human fetal cartilage progenitor cells as potential treatment agent for testosterone-induced hair loss

Ngoc-Trinh Tran², In-Su Park¹, Minh-Dung Truong¹, Hee-Woong Yun¹, Byung-Hyune Choi⁴, Byoung-Hyun Min^{*3}

¹Cell Therapy Center, Ajou Medical Center, Suwon, ²Department of Molecular Science and Technology, Ajou University, Suwon, ³Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, ⁴Department of Biomedical Sciences, Inha University College of Medicine, Incheon, Republic of Korea

PS01-040

Matrilin3/TGFβ3 gelatin microparticles promote chondrogenesis, prevent hypertrophy, and induce paracrine release in MSC spheroid for disc regeneration

Alvin Bello¹, Yunkyung Kim², Sunghyun Park³, Manjunatha Muttigi², Jiseong Kim¹, Hansoo Park², Soo-hong Lee^{*1}

¹Dongguk University, ²Chung Ang University, ³CHA University, Republic of Korea

PS01-041

Alginate patch containing extracellular matrix effectively delivers mesenchymal stem cell-derived secretomes for advanced skin wound healing

Jae Won Kwon¹, Cininta Savitri¹, Kwideok Park^{*1}

¹Korea Institute of Science and Technology, Republic of Korea

PS01-042

Thermosensitive copolymer coated and redox-induced dissolvable microsphere for efficient cell harvesting during 3D cell culturing

Shun-Hao Chuang¹, Haile F Darge¹, Yu-Hsuan Lin¹, Hsieh-Chih Tsai^{*1}

¹National Taiwan University of Science and Technology, Chinese Taipei

PS01-043

Engineered silk protein-based core-shell electrospun immunomodulatory fibrous scaffold for tissue regeneration with angiogenesis

Mercyjayapriya Jebakumar¹, Mohandass Pachaiyappan², Niraikulam Ayyadurai¹, Numbi Ramudu Kamini¹, Janani Radhakrishnan^{*1}

¹CSIR - Central Leather Research Institute, Academy of Scientific and Innovative Research (AcSIR), Ghaziabad- 201002, India, ²CSIR - Central Leather Research Institute, Chennai, India, India

PS01-044

The effect of macromolecular crowding on decellularized graft mediated mesenchymal stromal cell delivery for treatment of wounds

Shanshan Du¹, Clara Sanz¹, Stephen Elliman³, Dimitrios Zeugolis⁴, Timothy O'Brien^{*2}

¹Science Foundation Ireland (SFI) Centre for Research in Medical Devices (CURAM), Biomedical Sciences Building, National University of Ireland Galway (NUI Galway), Galway, Ireland, ²Regenerative Medicine Institute (REMEDI), Biomedical Sciences Building, National University of Ireland Galway (NUI Galway), Galway, Ireland, ³Orbsen Therapeutics Ltd, IDA Business Park, Dangan, Galway, Ireland, ⁴Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), Charles Institute of Dermatology, Conway Institute of Biomolecular & Biomedical Research and School of Mechanical & Materials Engineering, University College Dublin (UCD), Dublin, Ireland, Ireland

PS01-045

Novel implantable, wireless electricity auto-generating patch accelerates the wound healing process by modulating mechanosensitive ion channels

Yu-Meng Li¹, Tae-Hyun Kim¹, Won-Yong Jeon¹, Jun Hee Lee², Hye Sung Kim², Jeongeun Hyun², Jung-Hwan Lee³, Hae-Won Kim^{*3}

¹Institute of Tissue Regeneration Engineering (ITREN), Dankook University, South Korea; Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, South Korea, ²Institute of Tissue Regeneration Engineering (ITREN), Dankook University, South Korea; Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, South Korea; College of Natural Science, Dankook University, Cheonan, 31116, Republic of Korea, ³Institute of Tissue Regeneration Engineering (ITREN), Dankook University, South Korea; Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, South Korea; College of Natural Science, Dankook University, Cheonan, 31116, Republic of Korea; Department of Biomaterials Science, School of Dentistry, Dankook University, South Korea; UCL Eastman-Korea Dental Medicine Innovation Centre, Dankook University, South Korea, Republic of Korea

PS01-046

Therapeutic nanoglass paste as a drug-free platform for the regeneration of bacteria-infected hard tissues

Amal George Kurian³, Jung Ju Seo², Nandin Mandakhbayar⁴, MinSil Kang², Jung-Hwan Lee¹, Hae-Won Kim^{*1}

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PS01-047

Cobalt doped silica microcarrier with action of promoting angiogenesis and bactericidal potential through dual-ion delivery

Oyunchimeg Bayaraa¹, Khandmaa Dashnyam¹, Jung Hwan Lee², Hae Won Kim^{*2}

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PS01-048

Floating electrode-dielectric barrier discharge-based plasma can accelerate skin regeneration in a full-thickness skin defect mouse model

Jiwon Son¹, Laurensia Danis Anggradita¹, Hyungtae Kim², Sukyoon chang², Kwangok Choi², Seung Min Nam³, Yongsung Hwang^{*1}

¹Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, ²HK-MnS Co. Ltd., ³Department of Plastic and Reconstructive Surgery, Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Republic of Korea

PS01-049

Elucidating the role of cell surface free thiol groups in myogenic differentiation of skeletal muscle progenitor cells by mild reduction of cell surface

Juyeon Kim¹, Sung Sik Hur¹, YONGSUNG HWANG^{*1}

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PS01-050

The multiple deliveries of bioactive ions and growth factor with antibacterial/angiogenic and osteogenic/odontogenic capacity of nano-therapeutic particles for regeneration of degenerated/infected tissue by bacteria

Nandin Mandakhbayar¹, Ahmed El-Fiqi³, Seung Bin Jo¹, Jonathan C Knowles², Jung-Hwan Lee¹, Hae-Won Kim^{*1}

¹Dankook University, ITREN, ²UCL Eastman Dental Institute, England, ³National Research Centre, Cairo, Egypt, Republic of Korea

PS01-051

Effects of enamel matrix derivative on the cellular viability and differentiation potential of cell spheroids composed of gingiva-derived stem cells

Somyeong Hwa¹, Hyun-Jin Lee¹, Youngkyung Ko¹, Jun-Beom Park^{*1}

¹Department of Periodontics, College of Medicine, The Catholic University of Korea, Republic of Korea

PS01-052

Enhanced wound healing with decellularized amniotic membrane hydrogels by supercritical CO₂ process

Seongryeol Ye¹, Kangwon Lee², Youngmee Jung^{*1}

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PS01-053

The effect of hFC-MSCs on the induces bone formation by notch signaling

Jaemin Lee³, Hyun-Ju An¹, Jongseop Rim², Borim An², Junsung Kim², Bosung Jung¹, Soonchul Lee^{*1}

¹Department of Orthopaedic Surgery, CHA Bundang Medical Center, CHA University, Gyeonggi-do 13496, ²Fetal Stem Cell Research Center, CHA Advanced Research Institute, Gyeonggi-do 13488, ³Department of Biomedical Science, CHA University, Gyeonggi-do 13488, Republic of Korea

PS01-054

Thiolated mesoporous silica nanoparticles for the treatment of oxidative stress-associated osteoporosis

Nahida Rasool Dar¹, Dr Yashveer Singh^{*2}

¹Indian Institute of Technology Ropar, ²Department of chemistry, Indian Institute of Technology, Ropar, India

PS01-055

Wound healing effects of extremely low-frequency electromagnetic fields through activation and differentiation of stem cells

Ju-Hye Choi¹, Myeong-Hyun Nam¹, Ji-Hoon Park¹, Won-Jun Kim¹, Hee-Jung Park¹, Quan Feng Liu¹, Young-Kwon Seo^{*1}

¹Department of Medical Biotechnology, Dongguk University, Republic of Korea

October 7-8

PS02 Biomaterials

(scaffold, 3D printing, fabrication, etc.)

PS02-072

3D chondrogenic differentiation of human stem cells in reprogramming factor-based injectable hydrogel for cartilage tissue engineering

Sumi Choi¹, Su-Hwan Kim^{*1}

¹Dong-A University, Republic of Korea

PS02-073

Natural-origin injectable hydrogel for acellular skin wound treatment

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¹Universiti Kebangsaan Malaysia, Malaysia

PS02-074

Transplantation of the cultured human corneal endothelial cells with decellularized extracellular matrix in the corneal endothelial dysfunction rabbit model

Hun Lee¹, Yoonkyung Park¹, Jeong Hye Sunwoo¹, Yejin Song², Jin Kim¹, Sung Wook Choi³, Changmo Hwang², Jae Yong Kim¹, Hungwon Tchah¹, Hun Lee^{*1}

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PS02-075

Bio-adhesive complex coacervate-mediated localized AAV delivery

Hyun-Woo Park², Slgirim Lee¹, Jae-Hyung Jang^{*1}

¹Yonsei University, ²Yonsei University, South Korea, Republic of Korea

PS02-076

Thiol-ene clickable silk fibroin bio-ink for digital light processing bio-printing

Xuan Hao Tan^{*1}, James Goh Cho Hong¹

¹National University of Singapore, Singapore

PS02-077

Biomaterials text mining: A comparative study of methods on the biocompatible polymer polydioxanone

Carla Veronica Fuenteslopez^{*1}, Austin McKittrick², Javier Corvi³, Maria-Pau Ginebra², Osnat Hakimi⁴

¹Institute of Biomedical Engineering, University of Oxford, ²Department of Material Science and Engineering, Universitat Politècnica de Catalunya, ³Barcelona Supercomputing Center (BSC), ⁴Department of Material Science and Engineering, Universitat Politècnica de Catalunya; Barcelona Supercomputing Center (BSC), United Kingdom

PS02-078

Anti-inflammatory, dry adhesive patches based on catechol-modified sulfated hyaluronic acid for multipurpose application

Wonmoon Song¹, Young Hwan Choi², Nathaniel Suk-Yeon Hwang*¹
¹Seoul National University, ²Johns Hopkins School of Medicine, Republic of Korea

PS02-079

Strong adhesive hemostatic agent based on catechol-chitosan and hyaluronic acid

Jeong HaeIn^{1,2}, Song Won-Moon¹, So Kyoung-Ha¹, Hwang Nathaniel Suk-Yeon*¹
¹Seoul National University, ²Republic of Korea Army, Republic of Korea

PS02-080

Bioadhesive cryogel for non-compressible haemostasis during orthopaedic surgical procedure

Sivashanmugam Amirthalingam², Arun Kumar Rajendran¹, Nathaniel S Hwang*¹
¹School of Chemical & Biological Engineering, Institute of Chemical Process, Seoul National University, Seoul 08826, South Korea, ²Institute of Engineering Research, Seoul National University, Seoul 08826, South Korea, Republic of Korea

PS02-081

Integrating endothelialized microchannels with mesenchymal stem cell spheroids in a 3D-printed construct for ischemic disease therapy

Aruzhan Naren¹, Jeonghyun Son¹, Hyun-Wook Kang*¹
¹UNIST, Republic of Korea

PS02-082

Ceramic loaded tissue adhesive composite gel for rapid hemostasis in osteo-surgeries

Arun Kumar Rajendran¹, Sivashanmugam Amirthalingam², Nathaniel S Hwang*¹
¹School of Chemical and Biological Engineering, The Institute of Chemical Processes, Seoul National University, Seoul, 08826, ²The Institute of Engineering Research, Seoul National University, Seoul, 08826, Republic of Korea

PS02-083

Efficient activation of dendritic cells with CpG-coated functional nanoparticle

Jaesung Lim¹, Hee Seung Seo¹, Se-Na Kim², Jun-Hyeok Han¹, Wooram Park¹, Chun Gwon Park*¹
¹Sungkyunkwan University, ²Seoul National University, Republic of Korea

PS02-084

Modulating sepsis-associated NETosis dysregulation using bioinspired DNase- I -coated polymeric nanospheres

Yun Young Lee¹, Young Bin Choy¹, Chun Gwon Park*²
¹Seoul National University College of Medicine, ²Sungkyunkwan University, Republic of Korea

PS02-085

Engineered endothelium model ensures direct EC-pericytes interactions via polyvinyl alcohol/ECM-based artificial basement membrane

Avelino Dos Santos Da Costa¹, Valeryia Drobyslava¹, Kopych Vadym¹, Kwideok Park*¹
¹Center for Biomaterials, Korea Institute of Science and Technology, Republic of Korea

PS02-086

Nano-graphene oxide crosslinking improves in vivo durability of decellularized scaffold through MMP suppression and immunomodulation

Da-Hyun Kim¹, Min-Soo Kim¹, Kyung-Sun Kang*¹

¹Seoul National University, Republic of Korea

PS02-087

Development of poly(lactide-co-caprolactone) film combined with mesenchymal stem cell-derived matrix for corneal endothelial cells transplantation

Eui Sun Song¹, Choul Yong Park², Kwideok Park*¹
¹University of Science and Technology, Korea Institute of Science and Technology, ²Department of ophthalmology, Dongguk University, Republic of Korea

PS02-090

Enzyme-mediated redox system for tissue engineering

Su-Hwan Kim*¹
¹Dong-A University, Republic of Korea

PS02-091

Development of PDRN loaded alginate/silica hybrid hydrogel scaffold using 3D printing for enhanced diabetic wound healing

Hyun Lee¹, Nahyun Kim¹, Ginam Han¹, Sinwoo Park¹, Yuhyeon Na¹, Hyun-Do Jung*¹
¹The Catholic University of Korea, Republic of Korea

PS02-092

Fabrication of biomimetic microneedle patches with anti-microbial and enhanced wound healing ability using DLP-based 4D printing

Hyun Lee¹, Nahyun Kim¹, Hyun-Do Jung*¹
¹The Catholic University of Korea, Republic of Korea

PS02-093

Investigation of shear flow effect on vascular endothelium under a dynamic flow system

Vadym Kopych¹, Kwideok Park*¹
¹KIST, Republic of Korea

PS02-095

Composite scaffolds of gelatin and Fe3O4 nanoparticles for magnetic hyperthermia-based breast cancer treatment and adipose tissue regeneration

Rui Sun¹, Naoki Kawazoe², Guoping Chen*¹
¹a. Research Center for Functional Materials, National Institute for Materials Science; b. School of Pure and Applied Sciences, University of Tsukuba, ²Research Center for Functional Materials, National Institute for Materials Science, Japan

PS02-096

Development of PLA/sirolimus coated biodegradable PCL/SiO₂ stents fabricated by 3D printing

Ginam Han¹, Sinwoo Park¹, Hyun Lee¹, Seokbeom Kim², Jun-Kyu Park², Hyun-Do Jung*¹
¹Catholic University of Korea, ²CG Bio Co., Ltd, Republic of Korea

PS02-097

Development of drug-eluting bullets with controlled drug release and radiopacity for anti-cancer treatment

Ginam Han¹, Hyun Lee¹, Wooram Park², Hyun-Do Jung*¹
¹Catholic University of Korea, ²Sungkyunkwan University, Republic of Korea

PS02-098

Magnetic nanoparticles-based specific enrichment system for biomarker concentration of transplant rejection in the blood

Suhyun Kim¹, Jinmyoung Joo*¹
¹Department of Biomedical Engineering, Ulsan National Institute Science and Technology (UNIST), Republic of Korea

PS02-099

Influence of viscosity on osteogenesis and adipogenesis of mesenchymal stem cells with controlled morphology

Jing Zheng¹, Yongtao Wang¹, Naoki Kawazoe², Guoping Chen*¹

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PS02-100

Fabrication and evaluation of a powder-type hemostatic agent with effective adhesion property

Ye Lim Lee¹, Jeong Min Kim¹, Yunjeh Ko¹, Oh Hyeong Kwon*¹

¹Kumoh National Institute of Technology, Republic of Korea

PS02-101

Fabrication and characterization of a powder-type anti-adhesion agent with improved adhesiveness using hyaluronic acid

InHae Shin¹, Yu Jin Kim¹, Do Kyung Kim¹, Yunjeh Ko¹, Oh Hyeong Kwon*¹

¹Kumoh National Institute of Technology, Republic of Korea

PS02-102

Development of a powder-type adhesive hemostatic agent containing blood coagulation agent

Dong Hun Kang¹, Yunjeh Ko¹, Hyolim Lee¹, Donghun Sim¹, Oh Hyeong Kwon*¹

¹Kumoh National Institute of Technology, Republic of Korea

PS02-103

Detection of cancer using carbon dot-based conductive hydrogels with controlled pH-sensitivity through boronate ester bonds

Hyeong Jun Jo¹, Akhmad Irhas Robby³, Sung Young Park*²

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PS02-104

GSH responsive carbon dots incorporated flexible and stretchable skin sensor with wireless monitoring of pressure strain response in cancer condition

Kaustuv Roy¹, Akhmad Irhas Robby³, Sung Young Park*²

¹Department of IT and Energy Convergence (BK21 PLUS), Korea National University of Transportation, ²Department of Chemical and Biological Engineering, Korea National University of Transportation, ³Department of Green Bio Engineering, Korea National University of Transportation, Republic of Korea

PS02-105

Real-time wireless detection of tumor cells using a ROS-sensitive sensor comprising a diselenide polymer dot-coated surface

Sunu Hangma Subba², Seul Gi Kim¹, Sung Young Park*¹

¹Department of Chemical and Biological Engineering, Korea National University of Transportation, ²Department of IT and Energy Convergence (BK21 FOUR), Korea National University of Transportation, Republic of Korea

PS02-106

Tumor microenvironment-dependent maturation of hepatocarcinoma cells spheroids formed within microfluidics-generated 3D microgels for chemotherapeutics testing

Seung Yeop Baek¹, Suntae Kim¹, Chaenyung Cha*¹

¹Ulsan National Institute of Science and Technology, Republic of Korea

PS02-109

Preparation of multiscale biomedical scaffold by assembling self-healable hydrogel modules

JaeWook Park¹, JeongWoo Ham¹, HyunJi Kim¹, WonGun Koh*¹

¹Yonsei University, Republic of Korea

PS02-110

Fabrication of biomimetic scaffold for glycosaminoglycan (GAG)-rich tissue

Xingxing Yang¹, Barbara Pui Chan*¹

¹Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, China, Hong Kong

PS02-111

Gelatin scaffold with lipid-PLGA microparticles for sustained curcumin release and corneal tissue engineering

Chun Kai Chang¹, Chieh Cheng Huang*¹

¹National Tsing Hua University, Chinese Taipei

PS02-112

Development of cell-laden α -TCP/GeLMA 3D construct for hard tissue regeneration

Jueun Kim¹, Honghyun Park², Hui-suk Yun*¹

¹University of Science and Technology (UST), ²Korea Institute of Materials Science (KIMS), Republic of Korea

PS02-113

Separable double-layer microneedle codelivery of Dox and LPS for treating subcutaneous glioma tumor via immunotherapy

Zhen Xiang Hong¹, Yu Shuan Chen², Hsieh Chih Tsai*¹

¹National Taiwan University of Science and Technology, ²Buddhist Tzu Chi Medical Foundation, Chinese Taipei

PS02-114

Synergistic composite for wound healing by delivery of fibroblast growth factor

Minju Kim¹, Jinmyoung Joo*¹

¹UNIST, Republic of Korea

PS02-115

Zinc ion-releasing tissue adhesives for wound management

Sung Eun Kim¹, Kyung Min Park*¹

¹Incheon National University, Republic of Korea

PS02-116

Zinc ion-releasing in situ crosslinkable hydrogels for endogenous tissue regeneration

Yeonjeong Kim¹, Kyung Min Park*¹

¹Incheon National University, Republic of Korea

PS02-117

Assessing jellyfish collagen hydrogel for supporting human osteoblasts

Chaozong Liu*¹, Maryam Tamaddon¹, Andrew Mearns Spragg², Pascale Guillot¹, Swastina Nath Varma¹

¹University College Londo (UCL), ²Jellagen Ltd, United Kingdom

PS02-118

Gelatin-based dual delivery matrices releasing calcium and oxygen to facilitate vascularized bone tissue regeneration

Jeong Min Kim¹, Min Ji Han¹, Kyung Min Park*¹

¹Incheon National University, Republic of Korea

PS02-119

Silk-collagen hydrogel improves therapeutic effects of mesenchymal stem cells on neovascularization in hindlimb ischemia via FAK/Src axis

Yeo-Gyun Yun¹, Hae-Won Kim*²

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PS02-120

Chondrocyte-mimicking microspheres for osteochondral defect repair

ZECHU ZHOU¹, Na-Hyun Lee¹, Ji-Young Yoon⁴, Nandin Mandakhbayar², Hye Sung Kim², Hae-Won Kim³

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PS02-121

Oxygen-supplying syringe to create hyperoxia-inducible hydrogels for in situ tissue regeneration

Jeon Il Kang¹, Kyung Min Park^{*1}

¹Incheon National University, Republic of Korea

PS02-122

Long-term maintenance of viable adipocytes and enhanced blood vessel infiltration in vivo using spheroid-based bioprinted construct

Hanan Mohamed¹, Jeong Hyun Son¹, Wonwoo Jeong¹, Hyun-Wook Kang^{*1}

¹Ulsan National Institute of Science and Technology (UNIST), Republic of Korea

PS02-123

Controlled drug release by a tough and adhesive bilayer hydrogel with external stimulation

Jeesoo Park¹, Esensil Man Hia¹, Vignesh K. Kaliannagounder¹, Cheol Sang Kim^{*1}

¹Jeonbuk National University, Republic of Korea

PS02-124

Bio-reprinting technique as an advanced method for micro-scaled tissue structure fabrication

Jae-Hun Kim¹, Chanhan Kang¹, Jin-Hyung Shim¹, Songwan Jin¹, Won-Soo Yun^{*1}

¹Tech University of Korea, Republic of Korea

PS02-125

A multiple surface modification used in Ti, and 3D-printed Ti alloy scaffold to regulate osteoimmunology, angiogenesis and osteogenesis for orthopaedic and dental implant application

Chia-Fei Liu¹, Her-Hsiung Huang^{*1}

¹Department of Dentistry, National Yang Ming Chiao Tung University, Taipei, Taiwan, Chinese Taipei

PS02-126

pH-sensitive photonic crystal patch for wound healing monitoring

YongHoe Koo¹, Jinmyoung Joo^{*1}

¹Unist, Republic of Korea

PS02-127

Bio-ink and 3D printing-based to mimic of three-dimensional skin complex with internal blood vessels

Dongjin Lee¹, Ji Min Seok¹, Dahong Kim², Seunghun Son¹, Seon Ju Yeo¹, Jun-Hee Lee¹, Su-A Park^{*1}

¹Korea Institute of Machinery and Materials, ²Seoul National University, Republic of Korea

PS02-128

3D conduit model bio printing for mimicking the human intestine

Seunghun son¹, Su-A Park¹, Dongjin Lee¹, Ji Min Seok¹, Dahong Kim¹, Seon Ju Yeo¹, Jun-Hee Lee^{*1}

¹Korea institute of machinery and materials, Republic of Korea

PS02-129

Stent-based electrode for radiofrequency ablation in the rat esophagus: A proof-of concept study

Dong-Sung Won¹, Ji Won Kim¹, Jung-Hoon Park^{*1}

¹Biomedical Engineering Research Center, Asan Institute for Life Sciences, Asan Medical Center, Republic of Korea

PS02-130

Intragastric satiety-inducing device combined with photodynamic therapy to treat obesity

Ji Won Kim¹, Hoon-Yong Jung¹, Dong-Sung Won¹, Jung-Hoon Park^{*1}

¹Asan Medical Center, Republic of Korea

PS02-131

Development of 3D printed thermo-responsive skin-derived decellularized extracellular matrix hydrogel adhesive patch with controllable shrinkage behavior

Sungkeon Cho¹, Taehun Chung¹, Hyoryung Nam¹, Won-Woo Cho¹, Youn Soo Kim¹, Jinah Jang^{*1}

¹POSTECH, Pohang, Gyeongbuk, 37666, Republic of Korea

PS02-132

Development of 3D printing-based tendon-derived stem cell-laden 3D microtissues for tendon tissue engineering

Jothilin Subitsha Alex Jeberson¹, George Augustine¹, Yunhye Kim¹, Jiwon Son¹, Ami Lee¹, Joon Ho Lee², Yongsung Hwang^{*1}

¹Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, ²Department of Anesthesiology and Pain Medicine, Soonchunhyang University Bucheon Hospital, Republic of Korea

PS02-133

Development of anti-fouling and anti-thrombogenic surface using visible light cross-linked zwitterionic hydrogel coatings for implantable medical devices

Soonjong Roh¹, Kangwon Lee², Jin Yoo^{*1}

¹Korea Institute of Science and Technology, ²Research Institute for Convergence Science, Seoul National University, Republic of Korea

PS02-134

Visible light activated collagen based hydrogel for rotator cuff regeneration

Yerim Song¹, Jonghoon Choi², Youngmee Jung^{*1}

¹Korea Institute of Science and Technology, ²Chung-ang University, Republic of Korea

PS02-135

Polycaprolactone scaffolds with improved mechanical properties and structural stability fabricated by a screw extrusion-type 3D printer

Jae Jun Kang¹, Su Hee Kim¹, Misun Cha^{*1}

¹Medifab Co, Ltd., Republic of Korea

PS02-136**Development of a superhydrophilic surface for antifouling and antithrombotic properties using layer-by-layer assembly of laponite and heparin**Seyoun Jang¹, Il Keun Kwon², Jin Yoo*¹¹Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), ²Department of Dental Materials, School of Dentistry, Kyung Hee University, Republic of Korea**PS02-137****Fabrication of 3D bioprinted tumor cell-laden scaffold using photo-crosslinkable bioink**Kyoung Choi¹, Cho Young Park¹, Jun Shik Choi¹, Sang Jun Park¹, Sang Hyoun Choi³, Seok Chung², Chun-Ho Kim*¹¹Laboratory of Tissue Engineering, Korea Institute of Radiological and Medical Sciences, ²Program in Biomicro System Technology, Korea University, ³Research Team of Radiological Physics & Engineering, Korea Institute of Radiological and Medical Sciences, Republic of Korea**PS02-138****In-vivo biological safety and longevity study of thermal-sensitive chitosan dermal filler**Soo Hee Lee¹, Su Hee Kim¹, Mi Sun Cha*¹¹Medifab, Republic of Korea**PS02-139****Development of a 3D culture hydrogel and artificial skin model based on alginate-decellularized extracellular matrix**Seon Mi Park¹, Su Hee Kim¹, Misun Cha*¹¹MediFab Co., Ltd, Republic of Korea**PS02-140****Cationic N,N,N-trimethyl chitosan biomaterial-mediated modulation of inflammatory cytokines for wound healing and tissue regeneration**Hayoung Lee², Celine Abueva¹, Hyun Seok Ryu², So Young Park¹, Andrew Padalhin¹, Jun Won Min⁴, Phil-Sang Chung³, Seung Hoon Woo*³¹Beckman Laser Institute Korea, Dankook University College of Medicine, ²Interdisciplinary Program for Medical Laser, Dankook University, ³Department of Otorhinolaryngology-Head and Neck Surgery, Dankook University College of Medicine, ⁴Department of Surgery, Dankook University College of Medicine, Republic of Korea**PS02-141****Design of artificial human keloid skin equivalents with collagen-based hydrogels**Lee Jong Min¹, Kim Tae Hee¹, Kim Dong-Hwee², Jung Youngmee*¹¹Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), ²NBIT, KU-KIST Graduate School of Converging Science and Technology, Korea University, Republic of Korea**PS02-142****The effect of PLCL nerve guidance conduit and electrical stimulation on facial nerve regeneration**Goeun Choe³, Ulkyu Han¹, Seongryeol Ye², Sujee Kang¹, Young Sang Cho¹, Youngmee Jung*²¹Department of Otorhinolaryngology Head and Neck Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, ²Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Seoul, ³Korea Institute of Science and Technology, Republic of Korea**PS02-143****Layer-by-layer coatings for the enhanced biological performance of orthopaedic implants**Muhammad Faruq*¹, Anjaneyulu Udduttulla¹, Piergiorgio Gentile¹, Ana Marina Ferreira-Duarte¹¹Newcastle University, United Kingdom

October 7-8

PS03 Delivery systems

(drug, biomolecules, active ingredient, etc.)

PS03-014**Regulation of cell membrane permeability and photo-processing DNPs behavior for LED-mediated gene delivery**Cho Hui Bang¹, Hye Jin Kim¹, Sujin Lee¹, Hye-Ryoung Kim¹, Sujeong Lee¹, Keun-Hong Park*¹¹CHA University, Republic of Korea**PS03-015****Hydroxytyrosol: In vitro study on its feasibility and efficacy in attenuating intimal hyperplasia progression**Ubashini Vijakumaran², Muhammad Dain Yazid², Mohd Ramzisham Abdul Rahman¹, Hairulfaizi Haron¹, Nur Ayub Md Ali¹, Muhammad Ishamuddin Ismail¹, Nadiah Sulaiman*²¹Department of Surgery, Hospital Canselor Tuanku Mukhriz, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia, ²Center of Tissue Engineering and Regenerative Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia, Malaysia**PS03-016****Adeno-associated viral vector delivery system for the regeneration of hypoxia ischemic encephalopathy injured brain**Zheng Rong Lau¹, Jae Hyung Jang*¹¹Yonsei University, Republic of Korea**PS03-017****Enzyme-mediated oxygen releasing polyphenol particles for ischemia treatment**Jin-Woo Hong¹, Su-Hwan Kim*¹¹Dong-A University, Republic of Korea**PS03-018****Disturbed flow-targeting nanovesicles for early theragnosis of atherosclerosis**Seong-Jun Kang¹, Jung Bok Lee³, Hak-Joon Sung², Jeong-Kee Yoon*¹¹Chung-Ang University, ²Yonsei University, ³Sookmyung Women's University, Republic of Korea**PS03-019****Plant-inspired pluronic-gallol micelle: Low critical micelle concentration, high protein affinity, and thermal stability**Jungwoo Kim¹, Mikyung Shin*¹¹Department of Intelligent Precision Healthcare Convergence, Sungkyunkwan University, Republic of Korea**PS03-020****Anti-inflammatory efficacy of metformin-encapsulated PLGA**Dae Kyu Kim¹, Min jun Shin³, Dongwoo Khang*²¹Department of Biochemistry and Biomimetics, Bowdoin College, ²Department of Physiology, College of Medicine, Gachon University, ³Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, USA**PS03-021****Acoustic anticancer therapy using nanoparticle**Yong-Gyu Jeong¹, Dongwoo Khang*²¹Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, ²Department of Physiology, College of Medicine, Gachon University, Republic of Korea**PS03-022****Nano-corona anticancer strategy**Su Hyun Lim¹, Jun Young Park¹, Dongwoo Khang*²

¹Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, ²Department of Physiology, College of Medicine, Gachon University, Republic of Korea

PS03-024

PTH and novel PTH analog for osseointegration and bone regeneration in ovariectomized beagle model

Jinwoo Kim^{*1}, Sihoon Lee², Sun-Jong Kim¹

¹Ewha Womans University, ²Gachon University College of Medicine, Republic of Korea

PS03-025

Long-term anti-inflammatory effects of injectable celecoxib nanoparticle hydrogels for achilles tendon regeneration

Jun Kim¹, Young-Min Kim¹, Sung Eun Kim², Soo-Chang Song^{*1}

¹Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Seoul, 02792, Republic of Korea; ²Division of Bio-Medical Science and Technology, KIST School, Korea University of Science and Technology, Seoul, 02792, Republic of Korea, ³Department of Orthopedic Surgery and Rare Diseases Institute, Korea University Medical College, Guro Hospital, Seoul, 08308, Republic of Korea, Republic of Korea

PS03-026

Neuroprotective potential of phospholipase A2 against oxidative stress-induced toxicity in neuronal cell

Nur Atiqah Haizum Abdullah², Nur Qisyah Afifah Veronica Sainik⁵, Muhammad Rusdi Ahmad Rusmili⁴, Wayne C. Hodgson³, Mohd Farooq Shaikh¹, Iekhsan Othman^{*1}

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PS03-027 Withdraw

Inhibition of Pseudomonas biofilm causing osteomyelitis by the dual action of antibiotics and QSI contained in a HA/b-TCP porous bone granule (BG) system

Md Anirban Jyoti^{1,3}, Fadi Soukarieh¹, Laura Barrientos-Moreno¹, Shaun Robertson¹, Emily Dixon², Abshar Hassan³, Manuel Romero¹, Richard Johnson², Becci Hutchinson⁴, Laura Mason², Miguel Cámara¹, Felicity Rose^{*3}

¹National Biofilms Innovation Centre, Biodiscovery Institute, School of Life Sciences, University of Nottingham, Nottingham NG7 2RD, ²Upperton Pharma Solutions, Albert Einstein Centre, Science Park, Nottingham NG7 2TN, ³Regenerative Medicine and Cellular Therapy, School of Pharmacy, University of Nottingham, Nottingham NG7 2RD, ⁴Ceramisis Ltd, 914 Herries Road Sheffield, S6 1QW, United Kingdom

October 7-8

PS04 Stem cell engineering
(cell therapy, developmental biology, etc.)

PS04-014

Alginate encapsulation of 3D cultured mesenchymal stem cell spheroids for intraperitoneal injection in DSS-induced murine chronic colitis

Junhyeung Park¹, TIEP NGUYEN², Jisu Son¹, Jee-Heon Jeong^{*1}

¹Sungkyunkwan University, ²Keimyung University, Republic of Korea

PS04-015

Donor-dependent skeletal muscle differentiation mechanism of tonsil-derived mesenchymal stem cells

Min Ji Lee¹, Ha Yeong Kim¹, An Nguyen-Thuy Tran¹, Saeyoung Park², Sung-Chul Jung^{2,3}, Han Su Kim^{*1}

¹Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Ewha Womans University, 1071 Anyangcheon-ro, Yangcheon-gu, Seoul 07985, ²Department of Biochemistry, College of Medicine, Ewha Womans University, Seoul 07804, ³Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul 07804, Republic of Korea

PS04-016

Generation of functional airway epithelial cells from human tonsil-derived mesenchymal stem cells by mimicking stepwise differentiation

Ha Yeong Kim¹, Han Su Kim¹, Soo Yeon Jung^{*1}

¹Ewha Womans University, Republic of Korea

PS04-017

Optimization of in vitro culture conditions to maintain hepatic stellate cell in quiescence

Ya Gong¹, Mathieu Daony¹, Takemoto Kido², Masaki Nishikawa¹, Atsushi Miyajima², Yasuyuki Sakai^{*1}

¹University of Tokyo, Department of Bioengineering, ²University of Tokyo, Institute for Quantitative Biosciences, Japan

PS04-018

Phototoxicity-free blue light for enhancing therapeutic angiogenic efficacy of stem cells

Eun Cheol Lee¹, Sung Won Kim¹, Yu Jin Kim¹, Gwang Bum Im¹, Yeoung Hwan Kim¹, Gun Jae Jeong¹, Sung Min Cho¹, Hae Shin Lee¹, Suk Ho Bhang^{*1}

¹Sungkyunkwan University, Republic of Korea

PS04-019

Salivary gland organoids as therapeutic models for radiation-induced xerostomia

Seong Gyeong Jeon¹, Jaeseon Lee², Woo Hee Choi¹, Jaehwi Seo², Dong Hyuck Bae¹, Young Chang Lim³, Jongman Yoo^{*1}

¹Department of Microbiology, CHA University School of Medicine, Seongnam, ²ORGANOIDS SCIENCES Co., Ltd., 406, 560, Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, ³Department of Otorhinolaryngology-Head and Neck Surgery, the Research Institute, Konkuk University School of Medicine, Seoul, Republic of Korea, Republic of Korea

PS04-020

Synthesis of polystyrene nanoplastics degraded forms and their effect on stem cell

Hyun Su Park¹, Gwang-Bum Im¹, Suk Ho Bhang^{*1}

¹School of Chemical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea, Republic of Korea

PS04-021

Development of a stem cell spheroid-laden patch with high retention at skin wound site

Dong-Hyun Lee¹, Gwang-Bum Im¹, Suk Ho Bhang^{*1}

¹School of Chemical Engineering, Sungkyunkwan University, Republic of Korea

PS04-022

Study for region specific differentiation programme through distinct transcriptome of mouse small intestinal epithelial stem cells

Hoseok Ryu², Donghyeok Bae¹, Jongman Yoo^{*1}

¹Department of Microbiology, CHA University School of Medicine, Seongnam 13488, ²Department of Microbiology, CHA University School of Medicine, Seongnam 13488, Republic of Korea

PS04-023**Regulation of head and neck squamous cell carcinoma migration and invasion behaviors by mild reduction of cell surface**Laurensia Danis Anggradita¹, Sung Sik Hur¹, Myung Jin Ban², Yongsung Hwang^{*1}¹Soonchunhyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, ²Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Soonchunhyang University, Cheonan, Republic of Korea**PS04-024****Evaluation of the efficacy of SDF-1-based novel polypeptides by structure-based drug design in an acute myocardial infarction model**Kang-Gon Lee³, Ana Rita M. P. Santos¹, Yong Guk Kang¹, Yun Jin Chae², Myeongjin Myeongjin Song¹, Sangdun Choi⁴, Jongseong Kim², Yongdoo Park^{*1}¹Department of Biomedical Sciences, College of Medicine, Korea University, Seoul 02841, Korea, ²R&D center, Scholar Foxtrot, Seoul 02796, Korea, ³Korea university, ⁴Department of Molecular Science and Technology, Ajou University, Suwon 16499, Korea, Republic of Korea**PS04-025****PINK1 deficiency induces adipogenic differentiation and suppresses osteogenic differentiation in mouse mesenchymal stem cells**HyunJeong Yeo¹, So-Young Lee¹, Hyun-Ju An¹, Sujin Choi¹, Kyurim Lee¹, Soonchul Lee^{*1}¹Cha University, Republic of Korea**PS04-026****Cartilage repair in temporomandibular joint osteoarthritis mediated by inflammatory cytokines-stimulated human umbilical cord stem cells via immunomodulating activation of M2 macrophages**Hyunjeong Kim¹, Yerin Kim², Soyeon Yun², Bu-Kyu Lee^{*1,2,3}¹Biomedical Engineering Research Center, Asan Institute for Life Sciences, ²Asan Medical Institute of Convergence Science and Technology, ³Department of Oral and Maxillofacial Surgery, Asan Medical Center, Republic of Korea

October 7-8

PS05 Organ-mimetic platforms (organoid, organ-on-a-chip, etc.)**PS05-018****Differentiation of vascularized functional liver organoids using transcription factors in iPSCs**Wijin Kim¹, Juhyun Park^{*1}¹Department of Biomedical Science, Kangwon National University, Chuncheon, Gangwon-do, 24341, Republic of Korea**PS05-019****Engineered heterochronic parabiosis in 3D microphysiological system**Yunki Lee¹, Jeongmoon Choi¹, Gunjae Jeong¹, Young Jang^{*1}¹Emory University, USA**PS05-020****3D tumor angiogenesis models for effective anti-cancer treatment**Kim Hyelim¹, Kim Hongnam^{*1}¹KIST, Republic of Korea**PS05-021****3D bioprinting-based tissue assembly to generate multi-axially contracting engineered heart tissue**Dong Gyu Hwang¹, Uijung Yong¹, Hwanyong Choi¹, Jinah Jang^{*1}¹POSTECH, Republic of Korea**PS05-022****Integrating the endosteal and perivascular compartments of the bone marrow niche in a microfluidic device**HO-YING WAN^{*1}, Rita Lih Ying SHIN¹, Susan K. NILSSON², Rocky S. TUAN¹, Anna Maria BLOCK¹¹Institute for Tissue Engineering and Regenerative Medicine, The Chinese University of Hong Kong, ²Biomedical Manufacturing Commonwealth Scientific and Industrial Research Organisation (CSIRO), Melbourne, Australia; Australian Regenerative Medicine Institute, Monash University, Melbourne, Australia, Hong Kong**PS05-023****Bone marrow on-a-chip for in vitro bone disease modeling with Osteo-Vascular biphasic niche**Jung Hun Kim¹, Seoyeon Kim¹, Nathaniel Suk-Yeon Hwang¹, Hwan Kim^{*2}¹School of Chemical and Biological Engineering, Seoul national University, Seoul, ²Department of Polymer Science and Engineering, Department of Biomedical Engineering, Korea National University of Transportation, Chungju, 27469 Republic of Korea**PS05-024****Spatial restriction of diffuse gastric cancer cells promotes cell softening and filopodia formation**Seung Won Oh¹, Jae-Ho Cheong², Pilnam Kim^{*1}¹Department of Bio and Brain Engineering, KAIST, ²Department of Surgery, Severance Hospital, Yonsei University College of Medicine, Republic of Korea**PS05-026****Development of drug screening platform to mimic pancreas tumor microenvironment using decellularized extracellular matrix and pancreas organoids**Hanse Goh¹, Heymin Jung¹, Yuna Lee¹, Song Cheol Kim¹, In Kyong Shim^{*1}¹Asan Medical Center, Republic of Korea**PS05-027****Modeling pancreatic cancer with patient-derived organoids integrating cancer-associated fibroblasts**Go Yoon-Ha¹, Woo Hee Choi¹, Won Jung Bae², Sook-In Jung¹, Chang-Hoon Cho⁶, Seung Ah Lee⁵, Joon Seong Park⁷, Ji Mi Ahn², Sung Won Kim³, Kyung Jin Lee⁴, Dakeun Lee², Jongman Yoo^{*1}¹Department of Microbiology, CHA University School of Medicine, Seongnam 13488, Korea, ²Department of Pathology, Ajou University School of Medicine, Suwon 16499, Korea, ³Department of Otolaryngology 2014 Head and Neck Surgery, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul 06591, Korea, ⁴R&D Institute, ORGANOIDSCIENCES Ltd., Seongnam 13488, Korea, ⁵Department of Surgery, CHA Bundang Medical Center, CHA University, Seongnam 13496, Korea, ⁶R&D Institute, ORGANOIDSCIENCES LTD, Seongnam 13488, Korea, ⁷Pancreatobiliary Cancer Clinic, Department of Surgery, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul 06273, Korea, Republic of Korea**PS05-028****Differentiation of human hair follicle stem cells into a vascularized hair bearing skin organoids**Hyein Lee¹, MinHeui Yoo², Byoung-seok Lee², Jaeyeon Cho^{*1}¹ORG Corp., ²Korea Institute of Toxicology, Republic of Korea**PS05-029****Enhancing maturation of human vascularized cardiac organoids using a magnetic torque stimulation (MTS) system**TaeHoon Sin¹, Jimin Noh¹, Yongdoo Park^{*1}¹Korea Univ, Republic of Korea

PS05-030**Effect of direct oxygenation and coculture on primary hepatocytes & intestine epithelial cells cultured in stirrer-based microphysiological system (MPS) device**

Dhimas Kurniawan*¹, Kousuke Inamura¹, Mathieu Danoy¹, Sylvia Leo², Mutsumi Inamatsu³, Sohei Funaoka⁴, Daichi Aihara⁴, Takeshi Sakura⁴, Takumi Kawanishi⁵, Hiroshi Arakawa⁵, Yukio Kato⁵, Masaki Nishikawa¹, Nobuaki Shiraki², Shoen Kume², Hiroshi Kimura⁶, Yasuyuki Sakai¹

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PS05-031**3D multicellular cancer microenvironment platform supporting survival of acute myeloid leukemia (AML) in cultures**

Hoi Lam Cheung¹, Yu Hin Wong¹, Yuk Yin Li³, Koon Chuen Chan², Anskar Yu Hung Leung², Barbara Pui Chan^{*1}

¹Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong; Advanced Biomedical Instrumentation Centre, Hong Kong Science Park, ²L8-16, Lab block, Department of Medicine, LKS Faculty of Medicine, The University of Hong Kong, ³Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong

PS05-032**Generation of functional porcine and human thyroid organoid**

Lee Jaeho¹, Choi Woo Hee¹, Park Jun-Yeol¹, Yoo Jongman^{*1}

¹Department of Microbiology, CHA University School of Medicine, Seongnam 13488, Korea, Republic of Korea

PS05-033**Developing a novel strategy to support in vitro self-renewal of patient-derived head and neck squamous carcinoma cells**

Joohyun Kim¹, Laurensia D. Anggradita¹, Myung Jin Ban², Yongsung Hwang^{*1}

¹Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, ²Department of Otolaryngology, Soonchunhyang University, Republic of Korea

PS05-034**Evaluation of the efficacy of perfusion culture for the construction of three-dimensional endometrial-like tissue**

Kenshin Wakabayashi¹, Yusuke Tobe¹, Chihiro Toma², Goro Kuramoto², Jun Homma², Kiyotaka Iwasaki¹, Tatsuya Shimizu², Katsuhisa Sakaguchi^{*1}

¹Waseda University, ²Tokyo Women's Medical University, Japan

Optional Tour Program

TERMIS-AP 2022 provides a variety of tour programs on October 8 (Sat).

Anyone who is interested in participating in the tour may apply for tour program at the tour desk which will be placed near the registration desk. Please note that the courses are subject to change due to the weather conditions.

A. Full Day East Tour



A. Full Day East Tour		
Date & Time	Course	Fee (per person)
Oct 8 (Sat) 09:00-18:00	ICC Jeju → Horseback Riding → Seongeup Folk Village → Lunch → Via Gwangchigi Beach → Woman Diver Show → Seongsan Ilchulbong Peak → Via Jongdalri Shore Road → Manjang Cave → ICC Jeju → Jeju Airport	USD 99



A-1. Horseback Riding

(You will be taken to Horse Riding Show in heavy rain or heavy snow.)

Horses can be seen all around Jeju island. Horses were the most preferred gifts to be presented to the King from Jeju because the island was popularly called “the pasturage of horses”. Horse riding on a Jeju trip is something that should not be missed. The horses used for riding are known as Jejusanna and are of mixed breeds. Experiencing actual horse riding will make you feel closer to horses.



A-1-2. Jeju Horse Riding Show (Rainy Day Alternative Tour Course)

Back in the day, Jeju island was occupied by mongol for 100 years. At that time, mongolian brought lots of horses because they were horse riding people. So there are many mongolian horses in Jeju island now. In this performance, you could see the life of Genghis Khan, also could enjoy marvelous horse riding show; actual mongolian descendants put on the great performances.



A-2. Seongeup Folk Village

Located at the foot of Mt. Halla on Jeju Island, Seongeup Folk Village is a small town that holds a vast amount of culture.

Cultural properties in the folk village have been handed down from generation to generation and include treasures such as residential houses, Confucian shrines and schools, ancient government offices, stone statues, large millstones (pulled by horses or ox), fortress ruins, and stone monuments.



A-3. Lunch

Lunch (Choose either Jeju Black Pork Meal Set or Vegetarian Meal set)



A-4. Via Gwangchigi Beach

Gwangchigi Beach is One of Olle Trails; Olle Trail No.1. We could see the entire side view of Seongsan Ilchulpeak at Gwangchigi Beach. Recently Gwangchigi Beach has become an attention as one of 10 secret scenic attractions in Jeju Island



A-5. Woman Diver Show [UNESCO Intangible cultural asset]

Haenyeo refers to female divers who dive into the ocean water to gather various shellfish, seaweed, etc, without using any underwater diving equipment. When diving underwater, a haenyeo carries only a pair of goggles, a round ball-like tube to keep her balance, and a basket to put her collections in. Such women involved in the fishing industry are known to be scattered all around Jeju-do, Korea, Japan, and Russia.



A-5-2. Haenyeo Museum (Rainy Day Alternative Tour Course)

Jeju-do has established the Jeju Haenyeo Museum to introduce the unique activities and culture of Jeju-do's haenyeo female divers to the world. Jeju Haenyeo Museum exhibits various photos of haenyeo female divers and their activities, to provide an accurate picture of their lives.



A-6. Seongsan Ilchulbong Peak [UNESCO World Heritage]

(Trekking : 60 minutes)

Seongsan Ilchulbong Peak rose from under the sea in a volcanic eruption over 100,000 years ago. Located on the eastern end of Jeju Island, there is a huge crater at the top of Seongsan Ilchulbong Peak. The crater is about 600m in diameter and 90m high. With the 99 sharp rocks surrounding the crater, it looks like a gigantic crown. While the southeast and north sides are cliffs, the northwest side is a verdant grassy hill that is connected to the Seongsan Village. The ridge provides an ideal spot for walks and for horse riding as well.



A-7. Via Jongdalri Shore Road

The tour bus takes beautiful coastline of Noth-Eastern Jeju and you will pass by Hado Beach & Saehwa beach whilst heading to Manjang cave. Plus, Jongdalri Shore Road is known as for a hydrangea during Summer.



A-8. Manjang Cave [UNESCO World Heritage] (Trekking : 60 minutes)

Manjanggul Cave is one of the finest lava tunnels in the world, and is a designated natural monument. A lava tunnel is formed when the lava that was deep in the ground spouts from the peak and flows to the surface. Manjanggul Cave has a variety of interesting structures inside including 70cm lava stalagmites and the lava tube tunnels.



A-8-2. Daheeyeon (Rainy Day Alternative Tour Course)

Daheeyeon is a multi-theme park known as Cave Café & Daheeyeon Green tea field, can do various activity such as Zip Line, Foot Bath in Daheeyeon. The guests of Yeha will get Foot bath in Daheeyeon if not going to Manjang Cave due to the weather condition.

B. Half Day East Tour



B. Half Day East Tour		
Date & Time	Course	Fee (per person)
Oct 8 (Sat) 09:00-18:00	ICC Jeju → Seongeup Folk Village → Seongsan Ilchulbong Peak → ICC Jeju → Jeju Airport	USD 60



B-1. Seongeup Folk Village

Located at the foot of Mt. Halla on Jeju Island, Seongeup Folk Village is a small town that holds a vast amount of culture.

Cultural properties in the folk village have been handed down from generation to generation and include treasures such as residential houses, Confucian shrines and schools, ancient government offices, stone statues, large millstones (pulled by horses or ox), fortress ruins, and stone monuments.



B-2. Seongsan Ilchulbong Peak [UNESCO World Heritage]

(Trekking : 60 minutes)

Seongsan Ilchulbong Peak rose from under the sea in a volcanic eruption over 100,000 years ago. Located on the eastern end of Jeju Island, there is a huge crater at the top of Seongsan Ilchulbong Peak. The crater is about 600m in diameter and 90m high. With the 99 sharp rocks surrounding the crater, it looks like a gigantic crown. While the southeast and north sides are cliffs, the northwest side is a verdant grassy hill that is connected to the Seongsan Village. The ridge provides an ideal spot for walks and for horse riding as well.

C. Half Day South Tour



C. Half Day South Tour		
Date & Time	Course	Fee (per person)
Oct 8 (Sat) 09:00-18:00	ICC Jeju → Jusangjeolli Cliff → Yakcheonsa Temple → Cheonjiyeonpokpo Falls → ICC Jeju → Jeju Airport	USD 60



C-1. Jusangjeolli Cliff

If you follow the farm road about 600m to the southwest from Daepo-dong, at the end of the pine tree forest is a cliff. At the base of this cliff is the Jisatgae Coast along with the imposing stone pillars. Jusangjeolli are stone pillars piled up along the coast and is a designated cultural monument of Jeju Island. Jusangjeolli Cliff was formed when the lava from Hallasan Mountain erupted into the sea of Jungmun.



C-2. Yakcheonsa Temple

The architectural style of Yakcheonsa Temple is reminiscent of that of Buddhist temples of the early Joseon dynasty. Measuring an impressive 30 meters high and spanning a total area of 3,305 square meters, it is the largest temple in Asia.

Upon entering Yakcheonsa Temple, guests will be greeted by a 5-meter-high statue of Vairocana, the tallest of such statues in Korea, on a 4-meter-high pedestal.



C-3. Cheonjiyeonpokpo Falls [UNESCO Global Geopark]

The water of Cheonjiyeonpokpo Falls appears to fall from the heavens, giving it its name, meaning "sky connected with land." The wooded area around the falls is home to the wild dampalsu trees, designated as Natural Monument No. 163, as well as a great variety of rare plants such as brambles, and songyeopnan as well as gusiljappam trees, sanyuja trees (Chinese lemon trees), and camellias.

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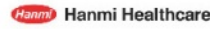
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MEMO

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MEMO

A series of horizontal dotted lines providing space for writing a memo.

MEMO

A series of horizontal dotted lines for writing.

GENOSS Research Analysis Service



Direct request
on online

제노스 연구분석 서비스

Micro-CT Analysis
Histology
Digital Slide Scan
SEM

Micro-CT (Skyscan 1173)

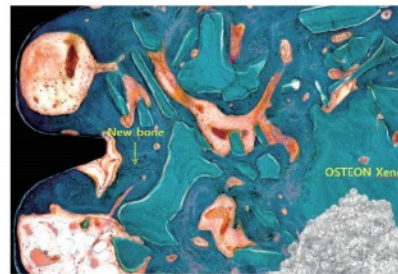
Bone graft implantation
experiment on Rat fibula

조직병리분석

- TRAP
Osteoclast detect, 골재생 정도 확인
- H&E staining
전반적 형태, 염증 반응 확인
- G/T, M/T staining
신생골 형성 확인, 통계작업 다수 사용
- Picosirius red
콜라겐 I & III Type 확인

Resin

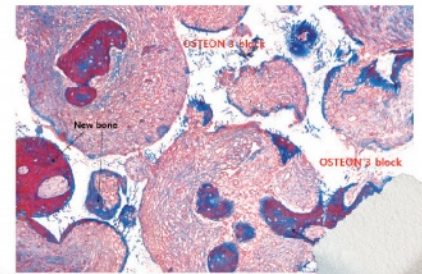
OSTEON Xeno in dog mandible (16w)



OSTEON Xeno

Paraffin

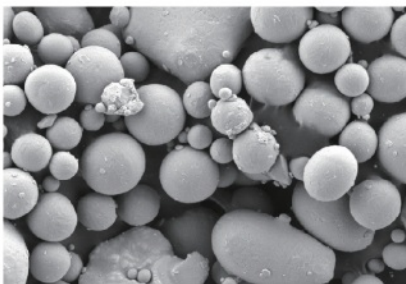
OSTEON 3 Block (24w)



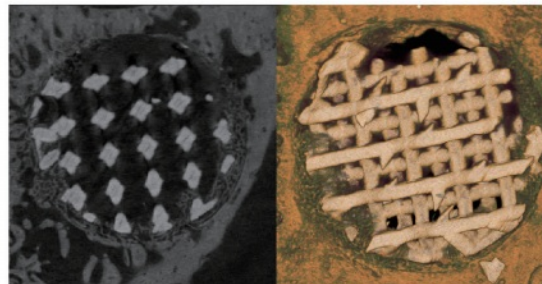
OSTEON 3 Block

Equipment

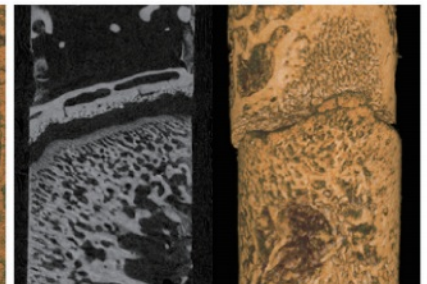
FE-SEM (Sigma 500, Zeiss)
Ti-powder



Micro-CT (Skyscan 1173)
PLA Scaffold



Rabbit femur



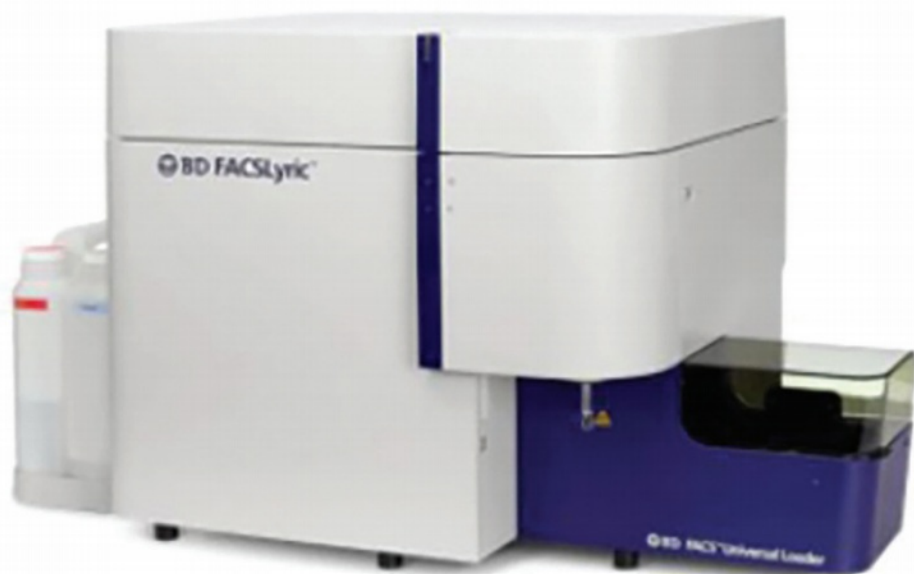
BD FACSLyric™

IVD flow cytometer

QC Beads

Buffer

Maintenance



QC Beads

- 자동으로 Laser alignment 점검
- QC를 통해 형광의 spillover 값 자동 갱신
- 60일 동안 안정적인 형광 보정 상태 유지

Buffer & Maintenance

- FACSLyric™ 구동을 위한 장비 버퍼, 유지보수 제품
- 전용 Buffer 사용으로 안전하게!
- 사용 및 유지보수의 중요성



(주)이에스사이언스 이남경 팀장

Tel: 041-572-0850 fax: 041-572-0851

email: es@iestech.co.kr

We are CustomBiotech from Roche



CUSTOMBIOTECH

Non-medical device/reagent, PMR-01102021_000022

Liberase Enzyme blend

동물 유래 성분 없이, 안전하게, 다양한 조직에서 세포 분리

Features

- GMP grade
- Enzyme blend : collagenase + thermolysin
- Mammalian tissue free 동물유래 성분 없음
- 높은 cell yield와 cell viability
- Reproducible : 로트별 일관된 결과 유지
- Residual Liberase/collagenase assay kit를 이용한 잔류 효소 확인으로 안정성 확보

Application

- pancreas, adipose tissue, liver, tumors, umbilical cord 등 여러 조직에서 세포분리
- Human Islet, adult stem cell, 그리고 hepatocyte, chondrocytes 분리
- Tissue engineering e.g., cartilage
- 인간세포 및 동물세포의 분리 및 배양



유익한 소식 하나 더!

한국로슈진단 CustomBiotech 카카오채널에
가입하시고,
유용한 정보와 이벤트 소식을 받아보세요!



Smith+Nephew

+ NPWT는 복잡할 필요가 없습니다

ONE Simple NPWT platform

ONE Smart solution across various care settings

ONE comprehensive portfolio



PICO[◇] 7

Single Use Negative Pressure
Wound Therapy System

RENASYS[◇] GO

Negative Pressure Wound
Therapy System



밀착력이 좋고
자극없이 제거되는
Soft Silicone Adhesive Dressing¹⁾



밀착력이 좋고 자극없이 제거되는

메디터치 Border

2차 드레싱이 불필요한 Soft Silicone Adhesive Dressing

- 피부손상 예방
- 드레싱 제거 시 통증 완화
- 습윤환경 조성
- 저자극성

3 X 4(cm) / 5 X 5(cm) / 6.5 X 6.5(cm)

5 X 10(cm) / 10 X 10(cm) / 5 X 20(cm)

Stratamed[®]

흉터치료 개선

Stratamed는 외과적인 치료 후 즉시 적용할 수 있으며 상처 치유 효과를 증진시키는 실리콘 젤 제품입니다.



전문적인 흉터치료

비대흉터 및 켈로이드의 예방과 개선을 위한 제품입니다.

Strataderm[®]

※ 이 제품은 의료기기입니다. FDA CE

3D 생체조직 플랫폼 사업단

약물평가 시범서비스

사업단 소개

줄기세포를 3차원 배양하여 인체장기를 재현하는 오가노이드를 활용해 신약 개발 사용자 플랫폼을 개발하여 **국내 최초 오가노이드 상용화**를 목표로 하는 사업단입니다.

시범서비스

사업단에서 구축된 "3D 생체조직 기반 약물평가 모델 검증"의 일환으로 신약개발을 위한 서비스 제공

사업단 주관기관

차의과학대학교

서비스 담당기관

한국화학연구원

참여기관

한국생명공학연구원 / 안전성평가연구소 / 한국기계연구원 / 한국표준과학연구원

참여병원

연세대학교병원 / 분당차병원 / 가톨릭대학교병원 / 건국대학교병원

참여기업

(주)켄온 / (주)큐베스트바이오 / (주)엑셀세라퓨틱스 / 신풍제약(주)

지원기간

사업기간 내 ('22년 ~ '23년)

분석대상

제약기업 등의 신약개발 후보물질

신청방법

사업단 홈페이지 접속 - 사업단제품서비스 - 서비스 신청 메뉴 (<http://www.3d-organoid.org>)

서비스 종류

분야	주요 분석 내용	기관
유효성평가	iPSC유래/환자유래 장 오가노이드 기반 염증성 장질환 (IBD) 유효성 평가	한국화학연구원
유효성평가	간 오가노이드 기반 비알코올성 지방간 (NAFLD) 유효성 평가	한국화학연구원
안전성평가	iPSC유래 간 오가노이드 기반 간독성 평가	한국화학연구원
안전성평가	iPSC유래 심장 오가노이드 기반 심장독성 평가	안전성평가연구소
약물성평가	iPSC유래 장 오가노이드 기반 약물흡수도 평가	한국생명공학연구원

신청절차



서비스 신청



상세 내용 작성



담당자 배정



서류 배송



약물평가



보고서 발행

문의방법

차의과학대학교 이수정 연구교수 (sujeong12@gmail.com/031-881-7163)

Nasopore

Family



NasoPore®

Standard, Firm and Extra Firm
Fragmentable Nasal Dressing

A wide range of options

While our line of ENT dressings has expanded, it started with NasoPore Standard, Firm and Extra Firm bioresorbable dressings. These nasal dressings are available in different fragmentation times and compression strengths to suit patient and user needs.

Nasopore Family

	NasoPore Standard	NasoPore Firm	NasoPore Extra Firm	HemoPore Hemostatic Agent
1 Fragmentation Time ¹	7-10 days	10-12 days	12-14 days	10-14 days
2 Tissue Support/Shape Integrity	36-48 hours	36-48 hours	36-48 hours	36-48 hours
3 Compression Strength/Stenting	Gentle	Firm	Extra Firm	Gentle to firm
4 Absorption Capacity	>12x initial weight	>12x initial weight	>12x initial weight	>12x initial weight
5 Hydrophilic	✓	✓	✓	✓
6 Material	100% synthetic proprietary polymer	100% synthetic proprietary polymer	100% synthetic proprietary polymer	100% synthetic proprietary polymer with a chitosan lactate hemostatic agent

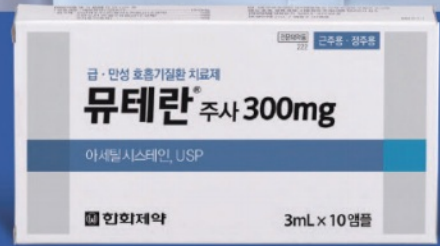
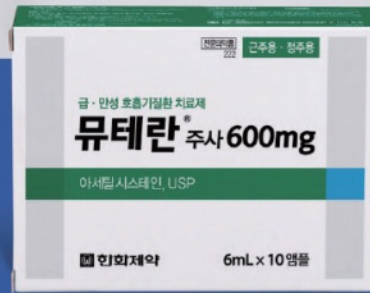
1. Fragmentation time can vary due to factors such as the amount of dressing inserted, nasal rinse practices and climate.

급·만성 호흡기 질환 치료제

뮤테란® 주사

Acetylcysteine 300mg / 600mg / 1,000mg

- 1 응고된 객담의 Disulfide(s-s) 결합을 끊어 객담의 점도를 낮춤^{1,2)}
- 2 점액 배출 속도와 섬모 운동 횟수를 증가시켜 객담의 배출을 활성화^{1,2)}
- 3 체내 Glutathione 농도를 높여 아세트아미노펜 간독성을 예방 및 치료³⁾
- 4 바이오필름의 Exopolysaccharide를 용해하여 바이오필름을 붕괴시켜 만성 및 지속성 감염의 항생제 치료에서 시너지 효과를 기대^{4,5)}



원료약품
및 그 분량

이 약 1mL 중 ·유효성분 - 아세틸시스테인(USP) 100mg

효능·효과

1. 진하고 점도높은 가래를 수반하는 다음의 기관지 질환에서의 객담배출곤란 증상 :
1) 성인 : 급·만성 기관지염, 기관지확장증, 천식모양기관지염, 인·후두염, 부비동염, 낭성섬유증, 수술후 폐합병증
2) 소아 : 급·만성 기관지염, 낭성섬유증
2. 아세트아미노펜 중독의 해독

성상

무색 내지 옅은 보라색의 투명한 액이
충진된 갈색 앰플제

용법·용량

1. 점액의 용해
1) 정맥주사 : 성인 아세틸시스테인으로서 1회 600~900 mg, 소아 이 약으로서 1회 300~450 mg을 1일 2~3회 주사(주사액의 조제 : 생리식염 주사액 또는 5% 포도당 주사액으로 희석하고 그 용액을 천천히 짧게 주입(약 5분 이상))한다.
2) 근육주사 : 성인 이 약으로서 1회 300 mg, 소아 이 약으로서 1회 150 mg을 1일 1~2회 주사한다.
2. 아세트아미노펜 중독의 해독
처음 15분간 이 약으로서 체중 kg당 150 mg을 5% 포도당 주사액 200 mL에 희석하여 점적정맥주사한다. 다음에 체중 kg당 50 mg을 5% 포도당 주사액 500 mL에 희석하여 4시간동안 점적정맥주사한다. 마지막으로 체중 kg당 100 mg을 5% 포도당 주사액 1,000 mL에 희석하여 16시간동안 점적정맥주사한다. 총 주입량은 체중 kg당 300 mg, 투여 시간은 20시간 15분으로 한다. 해독작용은 1회요법으로 충분하고 환자의 체중에 따라 주입용액의 양을 조절한다.

사용상의
주의사항

제품설명서 참조

포장단위

3mL X 10앰플, 6mL X 10앰플, 9mL X 10앰플

저장방법

차광기밀용기, 실온보관 (1~30°C)

1) Alternative medicine review 2000;5(5):467-471 2) Brocard et al., Eur J Respir Dis 1980;61(Suppl. III):65-69 3) Chun BJ et al., Med Assoc 2013;56(12):1067-1075
4) Zhao T et al., BMC Microbiol 2010;10(140):1-8 5) Oh KO et al., J Bacteriol Virol 2009;39(4):237-246 6) Sa do wska AM. Ther Adv Respir Dis. 2012;6(3):127-135

피부 고민에 따른
맞춤 의료기기로 관리하세요!

NEW



SIZE UP
 대용량 출시



SIZE UP
 대용량 출시



	건조 피부 보호 의료기기			염증 피부 보호 의료기기
모델명	아토베리어 로션 MD	아토베리어 크림 MD	에스트라 크림 MD	아토베리어 AI 크림 MD
사용목적	건조한 피부 등 피부장벽이 손상된 부위에 피부 보호를 위해 사용하는 창상피복재			화상(1도)이나 건조한 피부 등 피부장벽이 손상된 부위 및 염증 부위의 보호를 위해 사용하는 창상피복재
용량	200g / 300g	100g / 160g	100g	160g



제 발 지켜주세요.

Kaloderm[®]

Kaloderm[®](칼로덤)은 국내 최초의
동종유래 세포치료제입니다.¹

칼로덤 제품요약정보¹

전문의약품

【제품명】 칼로덤(사람유래피부각질세포) **【원료약품 및 그 분량】** 이 약 1개 중 • 칼로덤 56cm² 유효성분: 사람유래피부각질세포 2x10⁷개, 칼로덤 25cm² 유효성분: 사람유래피부각질세포 9x10⁶개, 칼로덤 9cm² 유효성분: 사람유래피부각질세포 3x10⁶개 **【효능·효과】** 1. 심부이도화상의 재생피화 촉진 2. 혈액공급이 원활하고 감염증 소견이 없는 당뇨병 족부궤양의 상처치유 촉진 **【용법·용량】** 상처부위를 식염수를 사용하여 깨끗이 정리한 후 칼로덤을 적용한다. 사용 5-10분 전 냉동고에서 꺼내어 상온에서 해동한 후 상처부위에 표피 기저층이 접촉하도록 적용한다. 칼로덤은 드레싱만으로 고정시키거나 스테이플(staple) 또는 봉합사(suture)로 고정시킨 후 드레싱을 할 수 있는데 시술자의 판단에 따라 습윤 또는 건조드레싱을 할 수 있다. 사용량은 상처의 크기와 상태를 고려하여 시술자가 판단한다. 필요할 경우, 상처부위에 대해 변연절제술 및 항생제 치료를 시행할 수 있다. **【사용상의 주의사항】** 1. 다음 환자에게는 투여하지 말 것. 1) 겐타마이신(Gentamicin)에 아나필락시스를 보인 병력이 있는 환자 2) 소유래 물질에 예민반응을 보이는 환자 3) 화농성 감염이 있는 환자 **【제조사】** 테고사이언스(주) 서울특별시 강서구 마곡중앙 8로 93 **【판매자】** 테고사이언스(주) 서울특별시 강서구 마곡중앙8로 93 **【공동판매자】** 에스케이케미칼(주) 경기도 성남시 분당구 판교로 310 2021.05.20 작성
※ 처방하시기 전 제품설명서 전문을 참고하십시오. 최신 허가사항에 대한 정보는 '식품의약품안전처 의약품안전나라 (<https://nedrug.mfds.go.kr/index>)'에서 확인할 수 있습니다.

Reference

1. 칼로덤 허가정보, 의약품안전나라 [Cited 2021.05.20] Available from: <https://nedrug.mfds.go.kr/>



CPlus

BIOTECH

Cplus Biotech Pty Ltd is a global innovative biotechnology company located in Brisbane, Queensland, Australia. Cplus Biotech dedicates in the technologies of human stem cells and stem cell derived products, including research, product development, and manufacturing, to accelerate the commercialisation of regenerative medicine and therapies.

By using our proprietary CPlus™ system (a new 3D dynamic cell culture system), our proprietary technology and our R&D capabilities, we are developing a series of innovative stem cell and stem cell derived products for healthcare, anti-aging, medical cosmetics, etc. to meet the needs of various fields.



SAFE



HIGH QUALITY



INNOVATIVE



PROFESSIONAL



PEOPLE-ORIENTED

Cell technology is believed to have a transformative impact on the treatment of many diseases, including oncology, immune-based diseases, neurological diseases, and other rare diseases. We aim to make full use of the various potentials of cell technology, so that those who need regenerative medicine and cell therapy can benefit from it.

Our Mission



In the field of cell technology and regenerative medicine
Conduct rigorous and innovative research
Development and commercial application



Research on stem cells and stem cell derived products and
Development expertise
Will bring transformative and
Innovative brand products



Satisfy people's concerns about beauty and health
The pursuit of longevity
Improve the quality of life



Maintain strong corporate ethics
And values

Contact Us

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[제조자] 신동제약 주식회사 경기도 안산시 단원구 원서로 7

[제조의뢰자]

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