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

Korean Tissue Engineering and Regenerative Medicine Society

termis ASIA-PACIFIC

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Contents

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

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Yoh-ichi Tagawa (Tokyo Institute of Technology, Japan)

2022 TERMIS-AP Awardees

Excellence Achievement Award

Prof. Yasuhiko Tabata

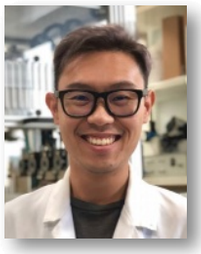
Institute for Life and Medical Sciences, Kyoto University, Japan

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, Universit 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 Portal 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 6 (Thu), 10:00-10:30	October 7 (Fri), 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

Tipping 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	Break		Lunch	
13:00-13:30	Opening Ceremony	Poster viewing & Exhibition	Symposia / Oral Session 4	Poster viewing & Exhibition
13:30-14:30	Plenary Lecture 1 (Prof. James J Yoo)			
14:30-16:00	Symposia / Oral Session 1		Symposia / Oral Session 5	
16:00-16:30	Coffee Break & Poster Session Part 1		Coffee Break	
16:30-18:00	Symposia / Oral Session 2		Symposia / Oral Session 6	
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	Cardiovascular	Plastic Surgery
	Biofabrication for Tissue Engineering and Personalized Disease Models	Clinical application of therapeutics for cardiac repair	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	Cardiovascular	Plastic Surgery
	Biomaterials and Enabling Technologies Innovation for Food Sustainability and Security	Recent Advances in Myocardial Tissue Engineering	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 13:30-14:30
Symposia / Oral Session 9				14:30-16:00
Coffee Break				16:00-16:30
Symposia / Oral Session 10				16:30-18:00
FTERM Session				18:00-18:30
Conference Banquet				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)	S3-B (Samda Hall)	S3-C (Room 301)
	Tissue Engineering	Otorhinolaryngology	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)	S4-B (Samda Hall)	S4-C (Room 301)
	Tissue Engineering	Otorhinolaryngology	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)	S5-B (Samda Hall)	S5-C (Room 301)
	Tissue Engineering	Biomaterials	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)	S6-B (Samda Hall)	S6-C (Room 301)
	Tissue Engineering	Biomaterials	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)	S7-B (Samda Hall)	S7-C (Room 301)
	2022 TERMIS-AP Awards Session	Biomaterials	Musculoskeletal
		Polymeric Biomaterials for tissue engineering	Musculoskeletal tissue regeneration
12:00-13:00	Lunch		
13:00-14:30	S8-A (Halla Hall)	S8-B (Samda Hall)	S8-C (Room 301)
	KFRM session : Domestic and Global Interaction in Cell Therapy Industry	Biomaterials	Musculoskeletal
		Biomaterials for Regenerative Engineering	Cell therapy for cartilage repair and osteoarthritis (KORS joint session)
14:30-16:00	S9-A (Halla Hall)	S9-B (Samda Hall)	S9-C (Room 301)
	Tissue Engineering	Biomaterials	KSBMT Joint Session
	Tissue Regenerative Platforms for Cartilage Joints	Biofunctional Hydrogels to Direct Cell Fate & Tissue Regeneration	
16:00-16:30	Coffee Break		
16:30-18:00	S10-A (Halla Hall)	S10-B (Samda Hall)	S10-C (Room 301)
	CARM Joint Session	Biomaterials	Obstetrics and Gynecology
		A partnership between natural biomolecules and biomaterials: towards new surface functionalities	Regeneration of Reproductive Tissues and Organs
18:10-18:50	FTERM Session (Halla Hall)		
19:00-20:30	Conference Banquet		

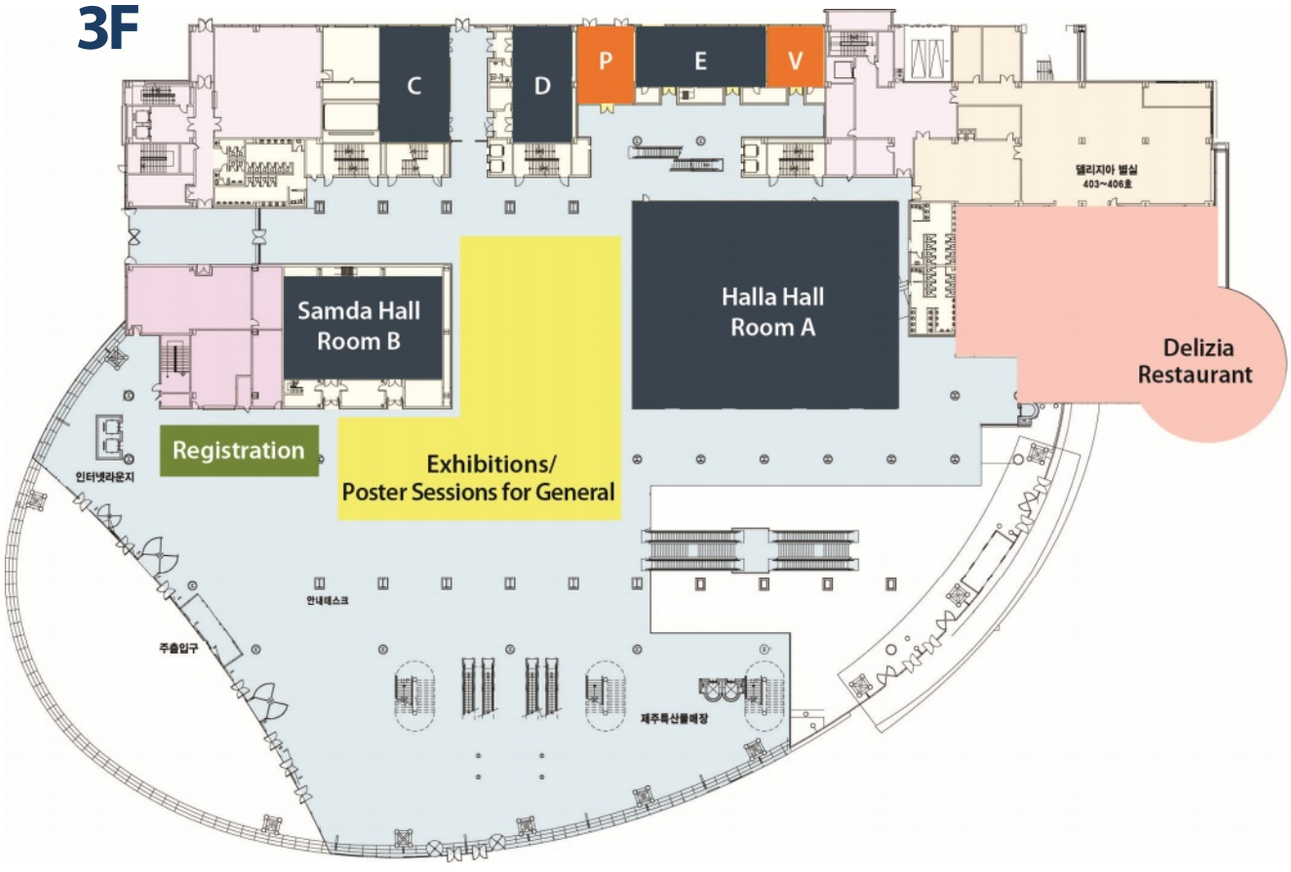
Time	Oct 8 (Sat)		
08:00-09:00	Registration		
09:00-10:00	**Plenary Lecture 4 (Prof. Young Sook Son) (Halla Hall)** **Endogenous stem cells in the bone marrow for tissue repair and diseasedevelopment**		
10:00-10:30	Coffee Break & Poster Session Part 2		
10:30-12:30	S11-A (Halla Hall)	S11-B (Samda Hall)	S11-C (Room 301)
	Tissue Engineering	Biomaterials	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 Biofabrication of Multicellular Engineered Living Systems	SYIS 3 Delivery Systems	
Lunch			12:00-13:00
S4-D (Room 302)	S4-E (Room 303)	S4-F (Room 401)	13:00-14:30
Immune Engineering Biomaterials for Immune modulation	Biofabrication In vitro Models: Processing techniques and applications	SYIS 4 Stem Cell Engineering	
S5-D (Room 302)	S5-E (Room 303)	S5-F (Room 401)	14:30-16:00
Manufacturing & Bioprocess Recent technologies for cell manufacturing	Biofabrication 3D bioprinting of vascularised organs and tissues	SYIS 5 Organ-Mimetic Platforms	16:00-16:30
Coffee Break			16:30-18:00
S6-D (Room 302)	S6-E (Room 303)	S6-F (Room 401)	16:30-18:30
Manufacturing & Bioprocess Manufacturing Technologies for Cell/Tissue Sources	Biofabrication New frontiers in advanced bioinks and biofabrication of functional tissues and organs	SYIS 6 Mentoring Session	
			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 Multiscale printing for biomedical application	Enabling Technology 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 Natrual compound-based Biomaterials	Stem Cells Recent Advances in Stem Cell Applications	Enabling Technology 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 Biomaterials for bone and cartilage regeneration	Stem Cells Next Generation Biomaterials for Stem Cell Culture and Differentiation	Organoids 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 Biomaterials-mediated Drug Delivery Strategies	Stem Cells Gene Editing and Manipulation for Stem Cell Engineering and Regenerative Medicine	Organoids 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 Biomaterials for 3D in vitro tissue-engineered cancer/disease models	Stem Cells New frontiers in stem cells and novel biomaterials based regenerative therapies	Enabling Technology Tumor Engineering with Biomaterials	
Closing Ceremony (Halla Hall)			12:30-13:00
Optional Tour			13:00-

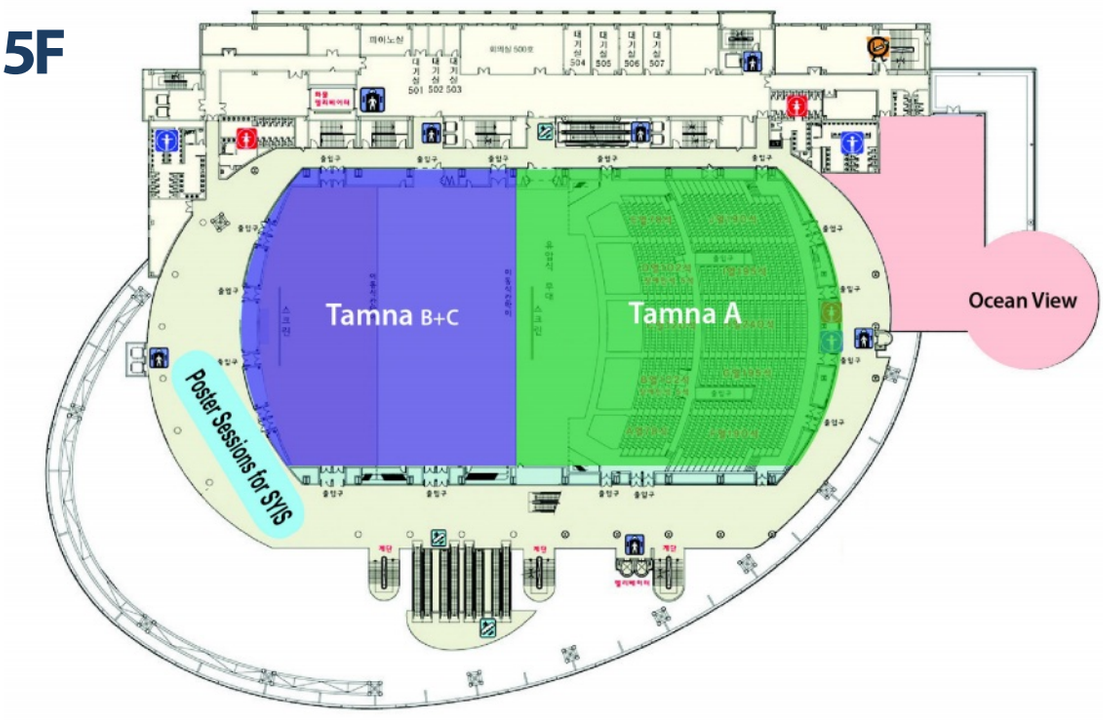
Floor Plan



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

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 regenerativemedicine

James J. Yoo*[1]

[1]Wake Forest Institute for Regenerative Medicine, Winston Salem, North Carolina, U.S.A.

Advances in tissue engineering and regenerative medicine have provided new therapeutic opportunitiesfor repairing damaged tissues and organs. Aligned with the goals of tissue engineering, we have followeda strategy that involves the use of biocompatible matrices, either with or without cells. The matrices areeither used as a cell delivery vehicle or scaffolds to promote and enhance tissue regeneration. When cellsare used, target cells obtained from donor tissue are isolated and expanded in culture, attached to asupport matrix, and re-implanted into a recipient to recover tissue function. This strategy has beensuccessfully applied to many tissue and organ systems in the clinic. However, developing and translatingviable solutions for complex tissue systems has been delayed. This is primarily due to various scientificand technological challenges inherent to the tissue-building process and implant integration, such asestablishing vascularization and innervation of volumetric tissue mass. Furthermore, processes involvingmanufacturing, regulation, and commercialization logistics present an additional layer of complexity. This presentation intends to provide a better understanding of the translational processes and discussesapproaches 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 Nguyen[1], Zong-Hong Lin[1], Snigdha Roy Barman[1], Amit Kumar Sharma[1], Ni-Xuan Song[1], Shih-Kai Lo[1], Ji-Yen Cheng[1], Yen Chang[1], Fwu-Long Mi[1], Hsiang-Lin Song[1], Yu-JungLin[1]

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

Traditional wound dressings do not promote cellular activities that heal wounds or assist in monitoringthe progress of that healing. This work develops an engineered electroactive dressing that comprises abacking film of collagen, a layer of polydopamine-crosslinked carboxymethyl chitosan conductivehydrogel, and an interdigitated array (IDA) electrode. The dressing is evaluated in a mouse model with afull-thickness skin defect. The incorporated conductive hydrogel provides a channel for transmitting theendogenous bioelectrical signals to the wound; stimulating electrical stimuli-responsive cells, andaccelerating the restoration of the wounded tissue. The IDA electrode, which is connected in series with aconventional power source or a self-powered triboelectric nanogenerator, is able to detect the electricalresistance 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 andtransmission, using a personal smartphone on which is installed an app. Such a real-time woundmonitoring system can be worn by patients in daily life; it issues early warnings to them of potentialinfections and wirelessly sends wound progression data to remote medical staff for dynamic interventionand 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]

[1]School of Engineering and Applied Sciences and Wyss Institute, Harvard University

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

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 diseasedevelopment

Youngsook Son*[1]

[1]Department of Genetic Engineering, Graduate School of Biotechnology, Kyung Hee University Directorof 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 ofreparative stem cells in the repair process. We identified a new role of substance-P (SP, 11 aa peptide) asan injury-inducible messenger to mobilize bone marrow MSC and EPC to the blood, home to the injuredtissue, and be engaged in the tissue repair in a variety of acute and chronic tissue injury models such asalkali-burn corneal injury, spinal cord injury, acute myocardiac infarction, stroke, limb ischemia, aorticinjury, diabetics, radiation-induced BM injury and gastrointestinal injury, elucidating endogenous healingmechanism recalling BM stem cells. In addition, SP can play a role as a novel anti-inflammatory cytokineto 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 tissueinflammation and clean up dead cells for tissue repair. This unique role of SP seems to orchestrate tissuerepair by reducing the inflammation-provoked tissue damages at early stage and creating favorablemicroenvironment for the engraftment of incoming stem cells and then recruiting endogenous stem cellsfrom bone marrow to the injured tissue as reparative stem cells for the tissue repair. Collectively, SP maybe proposed as a potential stem cell stimulating agent to cure a variety of acute and chronic diseasesrequiring the reduction of inflammation load and engagement of endogenous reparative stem cells. Thiswork 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 inmyocardial 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 Motooka, 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 Mdicine, 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

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 Biomechatronic 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 Choi1, Soo Hee Lee[2], Sumin Lee1, 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 infectionase 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, 3Oniris 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 Youn[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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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 Shima**[1], 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 Gopalakrishnan**[1], 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 Jang**[1], 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 Liu**[2], 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 Baek***[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 microfibrous, 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 Oh[2] [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 Choi[1] [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 Park[2] [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 Lee[1], Kangin Lee[1], Dong Woo Song[1] [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 An**[1], 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 Jeon[1] [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 realted 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 Investigaciu00f3n 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

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 Song**[2], 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 Kim**[1], 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. Reis**[1], 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 researchIn 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-Glover**[1], Amy Hulme[1], Sara Miellet[1], Rocio Finol-Urdaneta[1], Arsalan Yousuf[1], David Adams[1], Zhilian Yue[1], Gordon Wallace[1], Mirella Dottori1, 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 Park**[1], 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	**Drivers of age-dependent changes in angiogenesis: Role of pericytes and impacts on tissue engineering outcomes** **Justin Cooper-White***[1], Mahfuz Chowdhury[1], Desi Veleva[1], Ernst Wolvetang[1] [1]The University of Queensland, Australia
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 Blocki[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 Waqanivavalagi***[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[6], 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 electrospining 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 Pearce[1] [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 Ghim**[1], Hyung-Woo Kim[1], 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 Longoni[1], Jeremy Simcock[1], Khoon Lim[1], Tim Woodfield[1] [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 Hafemann[1], Guillaume Sudre[1], Alexandra Montembault[1], Francoi Lux[3], Olivier Tillement[3], Catherine Bonnefont-Rebeix[2], Samuel Buff[2], Corina Udrescu[4], Olivier Chapet[4], Claude Carozzo[2], Laurent David[1] [1]Laboratoire Ingenerie des Materiaux Polymeres, Universite Claude Bernard Lyon 1, INSA de Lyon, Universite 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 Lumiere Matiere, Universite 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]Departement of de radioterapie oncologie, centre hospitalier et universitaire Lyon Sud, Univ Lyon, 165, chemin du Grand-Revoyet, 69495 Pierre-Benite, France, [5]CNRS@CREATE Ltd, CREATE Tower, #08-01, 1 Create way, Singapore 138602/Laboratoire Ingenerie des Materiaux Polymeres, Universite Claude Bernard Lyon 1, INSA de Lyon, Universite 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 Ingenerie des Materiaux Polymeres, Universite Claude Bernard Lyon 1, INSA de Lyon, Universite 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 Yun[1], Sang-Kee Kang[1], Seo-Kyung Kim[1], Jeong-Chul Lee[1] [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 Shin**[2], Hae-Won Kim[2] [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 Lee[2], Amal George Kurian[3], Hae-Won Kim[2] [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** **Carmine 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

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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 Tabata**[1] [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 Xiao**[1] [1]School of Medicine and Dentistry, Griffith University, Australia
S7-A-03	11:40-11:50 Awardee	**Young Investigator Award 1** **Khoon Lim**[1] [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 Li**[1] [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 Tanaka[1] [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 Silva[1], Aiman Hakimi Abd Rahim[2], Sean Nair[1], Michael Sulu[1], Amirul Abdullah[2], Siti Noor Fazliah Mohd Noor[2], Hae-Won Kim[3], Linh Nguyen[1], David Chau[1] [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 microcapusles as a strain-regulated on-demand therapeutics delivery system** **Yun Kee Jo***[1] [1]Kyungpook National Unviersity, 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

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], Somin 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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New Chapter of Future Regenerative Medicine

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]CÚRAM, 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, cartilife 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	Natrual 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

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 Kim**[1], 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 Idris[1], Nur Jannaim Muhammad[2], Rosnani Mohamed[2], Fatimah Diana Amin Nordin[2], Julaina Abdul Jalil[2], Gee Jun Tye[4], Wan Safwani Wan Kamarul Zaman[3], Min Hwei Ng[1] [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 Park**[2], Han Kyung Kim[3], Hyeryeon Kim[4], Myoung Kyu Lee[1], Woo Hee Choi[7], Yejin Jang[1], Jin Soo Shin[1], Dong Hyuck Bae[8], Seong-In Hyun[2], Kang Hyun Kim[5], Meehyein Kim[6], Young Chang Lim[4], 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, Organoidsciences 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., 8Department 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 Maeng** [1], Ji-Yun Ko[2], Gun-Il Im[2], 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, Gyeonggido, 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 challengues of light-based bioprinting technologies** **Daniel Nieto***[1], Lorenzo Moroni[1] [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 Fattel[1], Daniel Nieto[2], Elvan Dogan[1] [1]New Jersey Institute of Technology, USA 2Maastricht 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 Ionov[1] [1]Bayreuth University
S8-F-04	13:55-14:10	**Silk fibroin as a bioink for cardiovascular applications** **Laura Vettori**[1], Habib Joukhdar[2], Anh Hien Tran[2], Hadi Mahmodi Sheik Sarmast[1], Elysse Filipe[3], Thomas Cox[3], Irina Kabakova[1], Jelena Rnjak-Kovacina[2], 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]Univerisity 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, 5Biomechanics 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)-γδ 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, Kyungheedae-ro, Dongdaemun-gu, Seoul, 02447, [2]Medical Science Research Institute, Kyung Hee University Medical Center/ Impedance Imaging Research Center, Kyung Hee University, 26, Kyungheedae-ro, 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 Mubarok[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 Latiff, 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

TERMIS-AP 2022

October 5-8, 2022 / JEJU, South Korea

New Chapter of Future Regenerative Medicine

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]ORGANOIDSCIENCES, LTD, 2ORGANOIDSCIENCES, 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** **Yongsoon 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 2Dankook 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	**Uterus-specific extracellular scaffolds and stem cells promote tissue regeneration after extensive injury in rodents** **Sara Bandstein***[1], Sara Lopez Martinez[3], Edina Sehic[2], Mats Brännström[1], Mats Hellström[1] [1]Laboratory for Transplantation and Regenerative Medicine, Department of obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Kvinnokliniken, Blu00e5 stru00e5ket 6, 413 45, Gu00f6teborg, Sweden, [2]Laboratory for Transplantation and Regenerative Medicine, Department of obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [3]IVI Foundation Edificio Biopolo, instituto de Investigaciu00f3n Sanitaria la Fe Avenida Fernando Abril Martorell, 106 Torre A, Planta 1a 46026, Valencia, Sweden
S10-C-02	16:55-17:10	**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] [1]Laboratory for Transplantation and Regenerative Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [2]Dept. of Obstetrics and Gynecology, Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [3]Dept. of Surgery, Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, [4]Stockholm IVF-EUGIN, Hammarby allé 93, Stockholm, Sweden
S10-C-03	17:10-17:25	**Artificial oviduct system for preimplantation embryo based on the mechanical mimic condition** **Jae Ho Lee***[2], Min Jeong Cho[3], Yu Jin Kim[3], JuYi Chang1, Ji Eun Lee[1], Yun Dong Koo[1] [1]Department of Biomedical Sciences, CHA University, [2]CHA University, [3]CHA Fertility Center Seoul Station, Republic of Korea
S10-C-04	17:25-17:40	**Differentiation into follicle-like cells using ovarian spheroid** **Yoon Young Kim***[1], Jiyeon Han[1], Sung Woo Kim[1], Seung-Yup Ku[1] [1]Seoul National University Hospital, Republic of Korea
S10-C-05	17:40-17:55	**Application of experimental in vitro model to evaluate uterine receptivity for embryo** **Yong Jin Kim***[1] [1]Korea University, Republic of Korea

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	**Biomaterials design of tissue engineering to enhance natural-hearing potentials for regenerative medicine** **Yasuhiko Tabata***[1] [1]Laboratory of Biomaterials, Institute for Life and Medical Sciences, Kyoto University, Japan
S10-D-02	16:55-17:10	**A human osteoarthritis cartilage explant model for assessing the effectiveness of antibody-conjugated cell micromass targeted delivery ease** **Angela MH Ng***[1], Shamsul Sulaiman[1], Rizal Abdul Rani[1], Nor Hamdan Yahaya[1], Yasuhiko Tabata[3], Yosuke Hiraoka[2] [1]Universiti Kebangsaan Malaysia, [2]Nitta Gelatin, [3]Kyoto University, Malaysia
S10-D-03 CANCELLED	17:10-17:25	**Osmoprocessor for enabling highly sensitive biomarker detection via lateral flow assays** **James Lai***[1], Sheng-You Chen[2], Abe Wu[1], Ruby Lunde[1] [1]Department of Bioengineering, University of Washington, [2]Department of Mechanical Engineering, University of Washington, USA
S10-D-04	17:25-17:40	**In vitro dendritic cell activation via exogenous delivery of tumor cell lysate using coacervate** **Jihyun Seong**[1], Kyobum Kim*[1] [1]Dongguk university, Republic of Korea
S10-D-05	17:40-17:55	**Chemical and biomolecular surface modification of electrospun nanofibers for localized delivery of adeno-associated viral (AAV) vectors** **Sigirim Lee**[1], Jae-Hyung Jang*[1] [1]Yonsei University, Republic of Korea

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 Dzhauari[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 dedicine)** **Armin Dadafshar**[1], Jun-Hyeok Park[1], Taegyu Lim[1], Hyemi Jeon[1], Ha Young Song[1], HyeJin Kim[1], Suyoung Jo[1], Woo Hee Choi1, 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

FTERM

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], Chaeeun 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. Lee**[1], 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, 4Complex 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 Park**[1], 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 Jeon**[1], 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 Yang**[1], 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 Roy**[3], 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	**An integrated precision medicine platform CIT-CoPT toward treating advanced colorectal cancer patients** **Zheng Wang***[3], Xingyue Wang[1], Xiaohuan Lu[4], Bo Cai[2], Xiaoqiong Li[2], Danyi Zou[1], Shijun Lei[1], Luming Xu[2], Guobing Wang[4], Lin Wang[1] [1]Department of Clinical Laboratory, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, [2]Research Center for Tissue Engineering and Regenerative Medicine, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, [3]Huazhong University of Science and Technology, [4]Department of Gastrointestinal Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China

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	**Direct reprogramming toward cardiovascular tissue and its cardiac regenerative effects** **Young-sup Yoon***[1] [1]Emory University, USA
S11-E-02	10:55-11:10	**Next generation immunomodulatory biomaterials to prevent rejection of transplanted stem cells in the infarcted heart** **Sanjiv Dhingra***[2], Weiang Yan[1], Alireza Rafieerad[1], Niketa Sareen[3], Keshav Alagarsamy[1] [1]Institute of Cardiovascular Sciences, St. Boniface Hospital Research Centre, Regenerative Medicine Program, Physiology and Pathophysiology, University of Manitoba, [2]St. Boniface Hospital Research Centre, University of Manitoba, [3]University of Manitoba
S11-E-03	11:10-11:25	**Exosome-MFGE8 aids in phagocytosis of dead cells and cardiac regeneration and repair** **Prasanna Krishnamurthy***[1], Mallikarjun Patil[1], Sherin Saheera[1], Hind Lal[1], Jianyi Zhang[1], Gangjian Qin[1] [1]University of Alabama at Birmingham, USA
S11-E-05	11:25-11:40	**Injectable neural stem cell-laden gelatin-based bioink for 3D bioprinting an in vitro brain tissue model** **Yi-Chen Li***[1] [1]Feng Chia University, Chinese Taipei
S11-E-06	11:40-11:55	**Neuroprotective and pro-angiogenic three-dimensional stem cell spheroids for treating ischemic stroke** **Chieh-Cheng Huang***[1], Ting-Wei Hsu[1] [1]Institute of Biomedical Engineering, National Tsing Hua University, Chinese Taipei
S11-E-07	11:55-12:10	**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 Park**[1], In Su Park[4], Moon Suk Kim[3], Byoung-Hyun Min*[2] [1]Ajou university, [2]Department of Orthopedic Surgery, School of Medicine, Ajou University, [3]Department of Molecular Science & Technology, Ajou University, [4]Cell Therapy Center, Ajou University Medical center, Republic of Korea

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	**Deconstructing a complex microenvironment with geometrically structured microtumours** **Kris Kilian***[1] [1]UNSW Sydney, Australia
S11-F-03	10:55-11:10	**Engineering tumor slice cultures ex vivo for personalized drug testing** **Eliza Fong***[1], Gopal Iyer[2], Christabella Adine[1], Kanishka Fernando[1], Nicholas Ho[1] [1]National University of Singapore, [2]National Cancer Centre Singapore
S11-F-04	11:10-11:25	**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 Pavesi[2] [1]Institute of Molecular and Cell Biology A-STAR, [2]IMCB A-STAR, Singapore
S11-F-05	11:25-11:40	**3D microphysiological systems for pre-clinical screening of anti-tumor therapies** **Giulia Adriani***[1] [1]Agency for Science, Technology and Research (A*STAR), Singapore

S11-F-06	11:40- 11:55	**Recapitulating intratumoral morphological heterogeneity in a bioprinted breast cancer model for personalized medicine** **Jonghyeuk Han**[1], Seunggyu Jeon[1], Min Kyeong Kim[1], Wonwoo Jeong[1], James J. Yoo[2], Hyun-Wook Kang*[1] [1]Department of Biomedical Engineering, Ulsan National Institute of Science and Technology (UNIST), [2]Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, Medical Center Boulevard, Republic of Korea
S11-F-07	11:55- 12:10	**When cancer cells leave their comfort zone: Phenotype switching of breast cancer cells upon crossing tissue interfaces** **Jiranuwat Sapudom***[2], Philipp Riedl[1], Cornelia Clemens[1], Laura Orgus[1], Alexandra Proeger[1], Jeremy Teo[2], Tilo Pompe[1] [1]Institute of Biochemistry, Leipzig University, 04103 Leipzig, Germany, [2]Laboratory for Immuno Bioengineering Research and Applications, Division of Engineering, New York University Abu Dhabi, Abu Dhabi, UAE, United Arab Emirates

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 Negishi5, 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 Kyungheedae-ro, Dongdaemun-gu, Seoul 02447, [2]Department of Dental Materials, School of Dentistry, Kyung Hee University, 26 Kyungheedae-ro, 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	**Engineering self-assembling peptide scaffolds for controlled delivery of viral vector serotypes** **Shiva Soltani Dehnavi***[1], Arianna Cembran[7], Leszek Lisowski[5], Alan Harvey[6], Clare Parish[4], Richard Williams[3], David Nisbet[2] [1]ACRF 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, [2]ACRF 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., [3]iMPACT, School of Medicine, Deakin University, Waurn Ponds, VIC 3216, [4]The Florey Institute of Neuroscience and Mental Health, The University of Melbourne, Parkville, Melbourne, VIC 3010, [5]Translational Vectorology Unit, Childrenu 2019s Medical Research Institute, Faculty of Medicine and Health, The University of Sydney, Westmead, NSW 2145, Australia. Vector and Genome Engineering Facility, Childrenu 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., [6]School of Human Sciences, The University of Western Australia, and Perron Institute for Neurological and Translational Science, Perth, WA 6009, Australia, [7]College of Engineering and Computer Science, School of Engineering, Australia
S3-F-09	11:50-12:00	**Sustained local release of PPAR-gamma agonist from 3D fabricated biodegradable nerve guide conduits** **Se Hun Chung***[1], Susan Barker[2], Duncan Craig[1], Jie Huang[1] [1]University College London, [2]Universities of Greenwich and Kent, United Kingdom

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	**Enzyme-controlled, nutritive hydrogel for mesenchymal stromal cell survival and paracrine functions** **Pauline Wosinski***[1], Cyprien Denoeud[1], Guotian Luo[1], Julie Boisselier[2], Adrien Moya[1], Stephane Marinesco[3], Anne Meiller[3], Adeline Gand[2], Delphine Logeart-Avramoglou[1], Emmanuel Pauthe[2], Esther Potier[1], Herve Petite[1] [1]University Paris Cite, CNRS, INSERM ENVA, B3OA, F-75010 Paris, [2]Equipe de Recherche sur les Relations Matrice Extracellulaire Cellules (ERRMECe), Institut des Materiaux, Universite de Cergy-Pontoise, 95302 Cergy-Pontoise Cedex, [3]Lyon Neuroscience Research Center, AniRA-Neurochem Technological Platform , Team TIGER , INSERM U1028, CNRS UMR5292 , 69675 Bron Cedex, France
S4-F-02	13:10-13:20	**Three-dimensional hydrogel with biophysical modulation regulates cellular reprogramming into induced pluripotent stem cell** **Deogil Kim**[2], Byung-Hyun Cha[3], Jinsung Ahn[1], Yoshie Arai[1], Min Ju Lee[1], Soo-Hong Lee*[1] [1]Dongguk University, [2]CHA University, [3]Kangwon University, Republic of Korea
S4-F-03	13:20-13:30	**Single-cell multiomic profiling identifies novel regulators of stem cell derived β-cell differentiation and maturation** **Punn Augsornworawat**[1], Jeffrey Millman*[2] [1]Washington University in St. Louis, [2]Washington University School of Medicine, USA
S4-F-04	13:30-13:40	**Priming of FGF2/HGF combination restores the impaired osteogenic differentiation of adipose-derived stem cells** **Jeong Seop Park**[1], Hyun Sook Hong*[2] [1]Kyunghee University, [2]Kyunghee University East-West Medical Research Institute
S4-F-05	13:40-13:50	**Exosomes secreted from fetal cartilage-derived stem cells promote skeletal muscle regeneration via the miR-145a** **DONG IL SHIN**[1], YONGJUN JIN[3], Sujin Noh[2], Jinho Park[1], NGOCTRINH TRAN[1], Byoung-Hyun Min*[1] [1]Department of Molecular Science and Technology, Ajou University, Suwon, [2]Department of Biomedical Sciences, School of Medicine, Ajou University, Suwon, Korea, [3]Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, Korea, Republic of Korea
S4-F-06	13:50-14:00	**Manipulation of inherent niches in 3D MSC spheroids improves therapeutic potential** **Kee-Chin Sia**[1], Chieh-Cheng Huang*[1] [1]Institute of Biomedical Engineering, National Tsing Hua University, Chinese Taipei
S4-F-07	14:00-14:10	**Phototoxicity-free blue light for enhancing therapeutic angiogenic efficacy of stem cells** **Eun cheol Lee**[1], Suk Ho Bhang1, Sung Won Kim* [1], Yu Jin Kim[1], Gwang Bum Im[1], Yeoung Hwan Kim[1], Gun Jae Jeong[2], Sung Min Cho[1], Hae Shin Lee[1] [1]Sungkyunkwan University, Republic of Korea, [2]Sungkyunkwan University, USA
S4-F-08	14:10-14:20	**Engineered 3D biomimetic skeletal muscle construct using induced myogenic progenitors that can self-renew and differentiate** **Inseon Kim**[1], Seunghun S. Lee[2], Stephen J. Ferguson[2], Ori Bar-Nur*[1] [1]Laboratory of Regenerative and Movement Biology, Department Health Sciences and Technology, ETH Zurich, [2]Institute for Biomechanics, Department of Health Sciences and Technology, ETH Zurich, Switzerland
S4-F-09	14:20-14:30	**Self-organized insulin-producing beta cells differented from human omentum-derived stem cell** **Ji hoon Jeong**1, Ki Nam Park[4], KyungMu Noh[1], Yunhye Kim[1], Sung Sik Hur[1], Jae Hong Park[3], Sang-Heon Kim[2], Yongsung Hwang*[1] [1]Soonchunhyang Institute of Medi-bio Science (SIMS), [2]Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Seouln, [3]Department of Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University Cheonan Hospital, Cheonan, [4]Department of Otorhinolaryngology-Head and Neck Surgery Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Bucheon, Republic of Korea

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

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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 Oh[1], Prakash Gangadaran[2], Hyun Mi Kim[1], Su In Kwak[2], Ji Min Oh[1], Myeong Jae Kang[1], Kang Young Choi[1], Byeong-Cheol Ahn[1], Ho Yun Chung[*1]

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P01-002

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

Ji Yong Choi[1], Da Eun Jeong[1], Joo Youn Lee[*1]

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P01-003

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

JIYOUNG LEE[1], Sang-Hyug Park[3], So-Ra Park[1], Byoung- Hyun Min[2], Byung Hyune Choi[*1]

[1]Inha university, [2]Ajou University, [3]Pukyong 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 Kwak[2], Eun Jung Oh[1], Hyun Mi Kim[1], Ho Yun Chung[*1]

[1]Department of Plastic and Reconstructive Surgery, School of Medicine, Kyungpook National University, Daegu, [2]KyungPook 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 Lee[1], Jiwon Lim[1]

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P01-006

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

Chaiyong Koaykul[*1], Vajara Wilairatana[1]

[1]Faculty 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 Kim[1], Ji Hye Park[1], Ji-Seon Lee[1], Dogeon Yoon[1], Wook Chun[*1]

[1]Burn 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 Ju[1], Min Beom Kim[1], Yun Kee Jo[*1]

[1]Department 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 Jung[1], Gi Seok Jeong[*1]

[1]Asan Medical Center, Republic of Korea

P02-003

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

Hyun Woo Joo[1], Min Kyu Kim[1], Soon Sun Bak[1], Young Kwan Sung[*1]

[1]Kyungpook National University, Republic of Korea

P02-004

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

Min Beom Kim[1], Yun Kee Jo[*1]

[1]Department 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 Baek[1], Min Beom Kim[1], Yun Kee Jo[*1]

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

P02-006

Effect of microplastics on blood-brain barrier (BBB)

YEONG SEON CHO[1], Jonghoon Choi[2], HongNam Kim[*1]

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

P02-007

Modeling myocardial infarction using multi-cellular cardiac organoids from hiPSCs

Myeongjin Song[1], Hanbyeol Lee[1], Jeong Suk Im[1], Da Bin Choi[1], Sujung Lee[1], Dong-Hun Woo[*1]

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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]

[1]Catholic university of Korea, Republic of Korea

P03-002

Optimising somatic cell reprogramming outcomes through mechano-modulation

Justin Cooper-White[*1], Mahfuz Chowdhury[1], Samuel Zimmerman[3], Jessica Mar[1], Christian Nefgzer[1], Jose Polo[4], Andrew Laslett[2], Ernst Wolvetang[1]

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

P03-003

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

JONGPIL KIM[*1]
[1]*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 Lee[1], Seo-Young Park[1], So-Hyun Park[1], Ji-Yun Ko[1], Gun-Il Im[*2]
[1]*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 Lee[1], Jae-Yeon Moon[1], Sang-Jun Han[1], Ji-Yun Ko[1], Gun-Il Im[*2]
[1]*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 Park[1], Soyeon Jeong[1], Yu Hwa Nam[1,2], Yoonji Yum[1], 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 Man[2], Ooi Yong Lin[1], Safinaz Mohd Khialdin[1], Aida Zairani Mohd Zahidin[3], Ng Min Hwei[4], Nordashima Abd Shukor[1], Muaatamarulain Mustangin[1], Wan Haslina Wan Abdul Halim[*1]
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P03-008

Hypo-immune retinal pigment epithelial cells for retinal regeneration

Ji Yeon Kim[1], Su Mi Kim[1], Young Hoon Sung[1,2], Eunju Kang[3], 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 Kwak[1], Min Hee Kim[1], Su Mi Kim[1], Ji Yeon Kim[1], 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 Park[1], JinSuk Lee[1], Mi Ra Lee[1], Yu Jin Yi[1], Moon Young Kim[*2]
[1]*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 Jung[1], Chang Woo Chae[1], Gee Euhn Choi[1], Han Seung Chang[1], 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 Chang[1], Jae Yun Jung[1], Ji Eun Choi[1], Hee-Won Jeong[1], Eunjeong Kim[1], 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) Oh[1], Ji-Hye Song[2], Inho Jo[1], 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 Choi[1], Se-Young Oh[1], Jin Hee Park[1], Ji-Young Hwang[3], Sung-Chul Jung[4], Inho Jo[*2]
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P03-024

UCHL1 plays a key role for the trans-differentiation of auditory supporting cells into hair cells in the cochlea

Yun-Hoon Choung[*1], Young Sun Kim[1], Yeon Ju Kim[1], Seong Jun Choi[3], Siung Sung[2], Dong Ha Lee[2], Sivasubramanian Ramani[1], Jungho Ha[1], Jeong Hun Jang[1], Si Yeon Seon[2], Hae Rim Lee[2], Jeong Min Lee[3]
[1]*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 Lee[1], Md. Salah Uddin[3], Jun-Beom Park[*2]

[1]The Catholic University of Korea, Republic of Korea, [2]Department of Periodontics, Seoul St Mary's Hospital, College of Medicine, The Catholic University of Korea Republic of Korea, 32Ethnobotanical 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 Kim[1], Seung Sang Hwang[2], Hee Seok Yang[3], Kyu Seok Kim[4], Jun Sik Son*[1]
[1]Korea Textile Development Institute, Republic of Korea, [2]Korea Institute of Science and Technology, Republic of Korea, [3]Dankook university, Republic of Korea, [4]M.I.Tech Co., Ltd., Republic of Korea

P04-002
Silk sericin increases BMP-2 expression in macrophage

Seong-Gon Kim*[1], Yei-Jin Kang[1], HaeYong Kweon[2], Ji-Hyeon Oh[1]
[1]Gangneung-Wonju National University, Republic of Korea, [2]National Academy of Agricultural Science, Republic of Korea

P04-003
The administration of peptides from silk sericin to the macrophage

Seong-Gon Kim*[1], Ji-Hyeon Oh[1], Yei-Jin Kang[1], HaeYong Kweon[2]
[1]Gangneung-Wonju National University, Republic of Korea, [2]National Academy of Agricultural Science, Republic of Korea

P04-004
Lotus-inspired multifunctional antifouling janus nanofibrous membrane for prevention of postsurgical tissue adhesion

Yu Ri Jeon[1], Yun Kee Jo*[1]
[1]Kyungpook 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 Jang[1], Seong Soo Kang[2], Gonhyung Kim[1], Seok Hwa Choi*[1]
[1]Department of Veterinary Surgery, Chungbuk National University, Republic of Korea, [2]Department 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 Jang[1], Seong Soo Kang[2], Gonhyung Kim[1], Seok Hwa Choi*[1]
[1]Department of Veterinary Surgery, Chungbuk National University, Republic of Korea, [2]Department 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 Jang[1], Ga Hee Kim[1], Kyu Seok Kim[2], Jun Sik Son*[1]
[1]Korea Textile Development Institute, Republic of Korea, [2]M.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 Song[1], Seung-Woon Baek[1], Yun Heo[1], Ah Reum Lee[1], Dong Keun Han*[1]
[1]CHA 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 Kim[1], Seung Woon Baek[1], Duck Hyun Song[1], Chun Gwon Park[2], Dong Keun Han*[1]
[1]CHA University, Republic of Korea, [2]Sungkyunkwan University, Republic of Korea

P04-010
Gelatin based edible 3D-porous scaffolds for culture meat applications

Madhusudana Kummara[1], Soon Mo Choi[1], Sunmi Zo[2], Suneetha Maduru[2], Sung Soo Han*[1]
[1]School of Chemical Engineering and Research Institute of cell culture, Yeungnam University, Gyeongsan-38541, Republic of Korea, [2]School 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 Lit*[1], Cheuk Kwan Li[2], Sui Ki Chiu[2], Anna Blocki[1]
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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 MOHAPATRA[1], In-Kyu Park*[1]
[1]Chonnam National University, South Korea, Republic of Korea

P04-013
Physicochemical properties of dexamethasone-loaded polydioxanone monofilament fiber with different draw ratio

Myoungjin Jang[1], Ga Hee Kim[1], Seung Won Yang[2], Yoon Ki Joung[2], Chang-il Kwon[4], Kyu Seok Kim[3], Jun Sik Son*[1]
[1]Korea Textile Development Institute, Republic of Korea, [2]Korea Institute of Science and Technology, Republic of Korea, [3]M.I.Tech, Co. Ltd., Republic of Korea, [4]CHA 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 Yoo[1], Hoyeol Lee[1], Nandha Kumar Ponnusamy[2], Seung Yun Nam*[2]
[1]Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Republic of Korea, [2]Major 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 MOHANTY[1], IN-KYU PARK*[1]
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P04-016
Inflammation-sensing catalase-mimicking nanozymes alleviate acute kidney injury via reversing local oxidative stress

Arathy Vasukutty[1], In-Kyu Park*[1]
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P04-017

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

Amal Babu[1], In-Kyu Park[*1]
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P04-018

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

Jae Park[1], Yeontaek Lee[1], Kijun Park[1], Jungmok Seo[*1]
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P04-019

Advanced fabrication of the vascular structure using triple-coaxial bioprinting

Jin Myoung Yoo[1], Seung Yun Nam[*2]
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P04-020

Electrochemical identification of naïve and primed PSCs based on cellular metabolism

KYEONG-MO KOO[1], Young-Hyun Go[2], Hyuk-Jin Cha[2], Tae-Hyung Kim[*1]
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P04-021

A new approach to characterize metastatic tendency of cancer cells

Kyeongwoon Chung[*1]
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P04-022

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

Pilyun kim[*1], Seok Beom Song[1], Mi Young Ryu[1], Baek Hyun Kim[1], Hyun Jung Park[1], Seung Hyo Go[1]
[1]*Research 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 VIJAYAN[1], In-Kyu Park[*1]
[1]*Chonnam National University, Republic of Korea*

P04-024

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

Young Kim[1], Byulhana Kim[3], Yoonho Lee[2], Youngmee Jung[4], Kangwon Lee[2], Justin J Chung[*1]
[1]*seoul national university, Republic of Korea,* [2]*Seoul national university, Republic of Korea,* [3]*Yonsei 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 Kim[1], Young Kim[2], Yoonho Lee[2], Youngmee Jung[4], Won-Gun Koh[1], Justin. J Chung[*3]
[1]*Department of Chemical and Biomolecular Engineering, College of Engineering, Yonsei University, Republic of Korea,* [2]*Transdisciplinary Department of Medicine and Advanced Technology, Seoul National University Hospital, Republic of Korea,* [3]*College of Medicine, Seoul National University, Republic of Korea,* [4]*Biomedical 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 Dornjak[*1], Karla Ostojic[2], Marin Kovacic[1], Inga Urlic[2], Anamarija Rogina[1]
[1]*University of Zagreb Faculty of Chemical Engineering and Technology Croatia,* [2]*University 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 Oliveira[*1], Jiahui Chen[2], Vaibavi Srirangam Ramanujam[1], Kieran Lau[2], Ju Wei[2], Shi Yan Ng[5], Alexandra Montembault[3], Sing Yian Chew[4], Laurent David[3]
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P04-028

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

Dong Hwan Oh[1], Phuong Le Thi[1], Dieu Linh Tran[1], Simin Lee[1], Ki Dong Park[*1]
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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 CHOI[1], Seungcheol Kang[2], In Kyong Shim[1], Euisup Lee[2], Yu Na Lee[1], Kyoung Hwan Koh[*2]
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P04-030

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

Shrestha Manju[1], Tiep Tien Nguyen[2], Nguyen Thi Linh[1], Jee-Heon Jeong*[1]
[1]*School of Medicine, Sungkyunkwan University, 2066, Seobu- ro, Jangan-gu, Suwon-si, Gyeonggi-do,* [2]*College of Pharmacy, Keimyung University, 42601, Daegu, Republic of Korea*

P04-031

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

Zawani Mazlan[1], Manira Maarof[1], Sarani Zakaria[3], Joao Mano[2], Fauzi Mh Busra[*1]
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Materials, University of Aveiro, Campus Universitu00e1rio de Santiago, 3810-193, Aveiro, Portugal., Malaysia, [3]School 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 Masri[1], Manira Maarof[1], Fatih Duman[2], Mh Busra Mohd Fauzi[*1]

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P04-033

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

ANKUR SOOD[1], ANUJ KUMAR[1], RITU SINGHMAR[1], SO YEON WON[1], HYEON JIN KIM[1], SUNG SOO HAN[*1]

[1]Yeungnam University, Republic of Korea

P04-034

Morphological control of gold nanoparticles to enhances stability of localized surface plasmon resonance signals

Joon-Ha Park[1], Yeon-Woo Cho[1], Jeong-Hyeon Lee[1], Tae-Hyung Kim[*1]

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P04-035

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

So Yeon Won[1], Hyeon Jin Kim[1], Abdulrahman Sharwani[1], Eun Bi Kim[1], Sun Mi Zo[1], Soon Mo Choi[1], Sung Soo Han[*1]

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P04-036

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

Mee-Hae Kim[1], Masahiro Kino-oka[*2]

[1]Osaka University, Japan, [2]Osaka 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 Seok[1], Kuncham Sudhakar[1], Sunmi Zo[1], Soonmo Choi[1], Kannan badri Narayanan[1], Sung Soo Han[*1]

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P04-038

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

Anwesha Barua[1], Saumitra Das[1], Gondi Kondaiah Ananthasuresh [*2]

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

October 5-6
T05 Biofabrication

P05-001

Fabrication of tissue specific multi-layered scaffold for periodontium regeneration

Dongyun Kim[1], Hyeongjin Lee[1], JaeYoon Lee[1], YoungWon Koo[1], WonJin Kim[1], Jiun Lee[1], JuYeon Kim[1], SooJung Chae[1], Hanjun Hwangbo[1], Amin Orash Mahmoudsalehi[1], SeoYul Jo[1], Mohan Pei[1], GeunHyung Kim[*1]

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P05-002

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

Dageon Oh[1], Seung Yun Nam[*1]

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P05-003

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

Hyeokjun Lee[1], Hyung Joon Cha[*1]

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P05-004

Study of mini-cornea model for eye irritation test

Seon-Hwa Kim[1], Sang-Hyug Park[*2]

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P05-005

Guided assembly of spheroids for complex tissue formation using functionalized magnetic nanofibers

Hayeon Byun[1], Hyewoo Jeong[1], Heungsoo Shin[*1]

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P05-006

Fabrication of biodegradable polycarbonate 3D printing scaffold and evaluation of biocompatibility

Yun Bae Ji[1], Moon Suk Kim[*1]

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P05-007

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

Sang Jin Lee[*1], Gabriel Carreno-Galeano[1], James Yoo[1], Anthony Atala[1]

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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 Park[1], Narae Jung[1], Sang-Hyun Park[3], Seunghan Oh[4], Sungtae Kim[2], Jong-Eun Kim[1], Hong Seok Moon[1], Young-Bum Park[*1]

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P06-002

The effect of extracellular matrix glycation on mechanoresponsiveness of cells

Insung Yong[1], Eun Sun Ji[2], Yoonmi Hong[1], Jin Young Kim[2], Pilnam Kim[*1]

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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 Visage[*1], Sebastien Grastilleur[1], Paul Humbert[1], Gregor Miklosic[2], Boris Halgand[1], Francois Loll[1], Matteo d'Este[2], Christophe Helary[3], Marion Fusellier[1], Jerome Guicheux[1]
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P06-005

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

Manira Maarof[*1], Mh Busra Fauzi[1], Yogeswaran Lokanathan[1], Shiplu Roy Chowdhury[1], Ruszymah Hj Idrus[2]
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P06-006

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

Ji-Won Jung[1], Da-Seul Kim[1], Dae-Hee Kim[3], Semi Lee[1], Euna Hwang[2], Dong Keun Han[*1]
[1]CHA University, Republic of Korea, [2]CHA Gangnam Medical Center, [3]Seoul 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 Lee[1], Mi-Iang Kyun[1], Tamina Park[1], Min-Heui Yoo[1], Inhye Kim[1], Hyewon Jung[1], Myeongjin Choi[1], Seo Yule Jeong[1], Jihye Son[1], Daeui Park[1], Kyoung-Sik Moon[*1]
[1]Korea Institute of Toxicology, Republic of Korea

P06-008

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

Chul Ho Jang[*1], WonJin Kim[3], GeunHyung Kim[2]
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P06-009

Oxygen-carrying nanomedicine for bone tissue engineering

Chung-Sung Lee[*1], Hee Sook Hwang[3], Min Lee[2]
[1]Sunmoon Univ., [2]University of California Los Angeles, [3]Dankook Univ., Republic of Korea

P06-011

Hyaluronic acid hydrogel with gradient mechanical properties for biomedical engineering

Mina Kwon[1], Ki Su Kim[*1]
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P06-012

Milk derived protein based scaffold enhanced ectopic and orthotopic bone formation

Min Suk Lee[1], Jin Jeon[1], Hee Seok Yang[*1]
[1]Dankook University, Republic of Korea

P06-013

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

Garin Kim[1], Changhan Yoon[2], Seung Yun Nam[*1]
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P06-014

Decellularized corneal extracellular matrix scaffold for corneal endothelium regeneration

Yyejin Song[1], Changmo Hwang[*2]
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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 Mok[1], Sunny Hoi-Sang Yeung[1], Gerald Wai-Yeung Cheng[1], Kai-Hei Tse[*1]
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P06-016

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

Ji-Yun Ko[1], Hyung Joon Cha[2], Seong-Woo Maeng[2], Sang-Jun Han[1], So-Hyun Park[1], Gun-Il Im[*1]
[1]Dongguk University, Republic of Korea, [2]Pohang 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 Kim[1], Heungsoo Shin[*1]
[1]Hanyang university, Republic of Korea

P06-018

Scaled-up hypertrophic cartilage tissue engineering for bone regeneration applications

Le Quang Bach[1], Lim Shin Ru[1], Chan Weng Wan[1], Wu Ying Ying[1], Deepak Choudhury[*1]
[1]Bioprocessing Technology Institute, Singapore

P06-019

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

Chang Dae Kim[1], Huijung Kim[1], Yoojoong Han[3], Intan Rosalina Suhito[1], Yoon Choi[1], Minkyeong Kwon[1], Hyung-Ryong Kim[2], Hyungbin Son[1], Tae-Hyung Kim[*1]
[1]Chung-Ang University, Republic of Korea, [2]Jeonbuk National University, [3]Nanobase, Inc, Republic of Korea

P06-020

Polymeric composite hydrogel for mimicking mechanochemical microenvironment of cartilage tissue

Anwesha Mukherjee[1], Bodhisatwa Das[*1]
[1]Department 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 Narayanan[1], Yong Joo Seok[1], Hyunjin Kim[1], Rakesh Bhaskar[1], Sung Soo Han[*1]
[1]*Yeungnam University, Republic of Korea*

P06-022

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

Yonghyun Gwon[1], Woochan KIM[1], Sunho Park[1], Hyoseong Kim[1], Jangho KIM[*1]
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P06-023

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

Woochan Kim[1], Yonghyun Gwon[1], Sunho Park[1], Hyoseong Kim[1], Jangho Kim[*1]
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P06-024

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

Young Hun Kim[1], Min Young Lee[1], Moon Suk Kim[*1]
[1]*Ajou University, Republic of Korea*

P06-025

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

Shina Kim[1], Yun Bae Ji[1], Moon Suk Kim[*1]
[1]*Ajou 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 Hwang[*1]
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P09-002

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

Tae Ki Lee[1], Gonhyung Kim[1], Seong Soo Kang[2], Seok Hwa Choi[*1]
[1]*Department of Veterinary Surgery, Chungbuk National University, Republic of Korea,* [2]*Department 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 Kim[1], Jongchan Ahn[1], Jusik Lee[1], Seongsoo Song[1], Seunghee Lee*[1], Kyung-Sun Kang*[1]
[1]*Stem 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 Lee[1], Seul Ki Han[2], Mi Ra Lee[1], Su Jung Park[1], Yu JIN Yi[1], Moon Young Kim[*2]
[1]*Yonsei university wonju college of medicine, Republic of Korea,* [2]*Wonju 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 Kim[1], Jin-Young Park[1], Xiang Jin[1], Jae-Kook Cha[1], Jung-Seok Lee[1], Seong-Ho Choi[1], Ui-Won Jung[*1]
[1]*Department of Periodontology, Research Institute of Periodontal Regeneration, Yonsei University College of Dentistry, Republic of Korea*

P09-006

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

Yongsub Byun[1], Ig Jun Cho[1], Do Eun Do Eun[1], Hee-Sang Roh[2], Sori Lee[2], Juhan Lim[2], Joong-Hyun Kim[*1]
[1]*KBIOHealth, Republic of Korea,* [2]*HYUNDAI 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 LEE[1], Hye-Jin Hur[3], Han-Soo Kim[*2]
[1]*Yonsei university wonju college of medicine,* [2]*Catholic Kwandong University College of Medical Convergence,* [3]*Yonsei University College of Medicine, Republic of Korea*

P09-008

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

Joong-Hyun Kim[*1], Min Chul Song[1], Dong Gwan Shin[1], Sohee Kim[2], Jae-Won Jang[2]
[1]*KBIOHealth,* [2]*Daegu Gyeongbuk Institute of Science & Technology (DGIST), Republic of Korea*

P09-011

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

JEONGHO KIM[2], Han Sang Park[1], Hong Kyun Kim[*1]
[1]*Kyungpook National University Hospital,* [2]*Kyungpook National University, Republic of Korea*

P09-012

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

In Ho Nam[1], Yun kee Jo[2], Hyung Joon Cha[*1]
[1]*Pohang University of Science and Technology,* [2]*Kyungpook National University, Republic of Korea*

October 5-6
P10 Others

P10-001

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

Jeremy Teo[*1], Jiranuwat Sapudom[1], Praveen Laws[1], Anna Garcia-Sabate[1], Mohammed Daqaq[1]
[1]*NYUAD, United Arab Emirates*

P10-002

Hyper O-GlcNAcylation facilitates regenerative dentin formation via inflammation modulation

Elina Pokharel[1], Tae-Young Kim[1], Yam Prasad Aryal[1], Jae-Kwang Jung[5], Seo-Young An[2], Chang-Hyeon An[2], Youngkyun Lee[1], Do-Yeon Kim[4], Jung-Hong Ha[3], Jae-Young KIM[*1]
[1]*Department of Biochemistry, School of Dentistry, IHBR, Kyungpook National University,* [2]*Department of Oral and Maxillofacial Surgery, School of Dentistry, IHBR, Kyungpook National University,* [3]*Department of Conservative Dentistry, School of Dentistry, IHBR, Kyungpook National University,* [4]*Department of Pharmacology, School of Dentistry, IHBR, Kyungpook National University,* [5]*Department of Oral Medicine, School of Dentistry, IHBR, Kyungpook National University, Republic of Korea*

P10-003

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

Sooyoung Hwang[1], Kijun Park[1], Jae Park[1], Jungmok Seo[*1]
[1]*Yonsei 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 Iteda[2], Yusuke Morita[1], Koji Yamamoto[*1]
[1]*Department of Biomedical Engineering, Doshisha University, Japan,* [2]*Graduate 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 Lis[1], Chaozong Liu[1]
[1]*University 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 Ju[1], Min Ju Kim[1], So Jeong Park[1], Moon Suk Kim[*1]
[1]*Ajou University, Republic of Korea*

P10-007

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

Soyeon Lee[1], Yun Bae Ji[1], Min Ji Han[1], Moon Suk Kim[*1]
[1]*Ajou university, Republic of Korea*

P10-008

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

Rakesh Joshi[1], Dong-Hwee Kim[*1]
[1]*Korea University, Republic of Korea*

Part 2

October 7-8
P02 Organoids

P02-009

Bone organoid model for studying bone metabolism and disease

Hyang Kim[1], Jung-Hwa Choi[1], SeulGi Kim[1], SaeRom Jeoung[3], Mina Choi[4], Seung-Yeol Lee*[2]

[1]MyongJi Hospital, New Horizon Biomedical Engineering Institute, [2]MyongJi Hospital, Hanyang University College of Medicine, [3]Ewha Womans University, College of Medicine, [4]MyongJi 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 Lim[1], Dong Sung Kim[2], Dohui Kim[2], Tae-Eun Park*[1]

[1]Ulsan National Institute of Science and Technology, [2]Pohang 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 Moon[1], Young Jae Park[1], Jihyun Chun[1], Da Woon Jung[1], Hyun-Soo Roh[3], Ho Jin Park[2], Kwan-Hyuck Baek3, Hong Jin Lee[2], Do Yup Lee*[4]

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P02-012

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

jisun Kim[1], Yeo Jun Yoon[1], Jae-Yol Lim*[1]

[1]Department 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 Diep[1], Hae Young Ko[3], Tai Young Kim[2], C. Justin Lee[2], Mijin Yun[3], Hansang Cho*[1]

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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 Choi[1], Sumin Cho[2], Jae Min Cha[2], Inbo Han*[1]

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

P03-016

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

JIYOUNG LEE[1], Hwal Ran Kim[3], So Ra Park[1], Byoung-Hyun Min[2], Byung Hyune Choi*[1]

[1]Inha university, [2]Ajou University, 3ATEMs Inc, Republic of Korea

P03-017

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

SUN YOUNG WANG[1], Hyun Cheol Bae[1], Won-Young Cho[1], Hee Jung Park[1], Ha Ru Yang1, Hyuk-Soo Han*[1]

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

P03-018

Hypoxic condition enhances chondrogenesis in synovium- derived mesenchymal stem cells

Ha Ru Yang[1], Hyun Cheol Bae[1], Won young Cho[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

P03-019

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

Fazlina Nordin*[2], Izyan Mohd Idris[2], Nur Jannaim Muhammad[1], Rosnani Mohamed[1], Fatimah Diana Amin Nordin[1], Julaina Abdul Jalil[1], Adiratna Mat Ripen[1], Gee Jun Tye[4], Wan Safwani Wan Kamarul Zaman[3], Min Hwei Ng[2]

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P03-020

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

Min Hee Kang[1], Ji Eun Jang[1], Yuyeong Yang[1], Jeong Eon Lee[1], Joo youn Lee*[1]

[1]Xcell 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) Oh[1], Young Min Choi[4], Yoon Shin Park[3], Inho Jo*[2]

[1]Department of Molecular Medicine, College of Medicine, Ewha Womans University, [2]Department of Molecular Medicine, College of Medicine Ewha Womans University; Korean Fund for Regenerative Medicine, [3]Department of Biological Sciences and Biotechnology, College of Natural Sciences, Chungbuk National University, [4]Department 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 Lee[1], Da Hyeon Choi[1], Min Ji Cho[1], Jeong Eun Kim[1], Seung Jae Yun[1], Yoon Shin Park*[1]

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

P03-023

Changes in the integrin α3 expression controls tonsil derived mesenchymal stem cell proliferation and senescence

Da Hyeon Choi[1], Se-Young Oh[2], Kyeong Eun Lee[1], Inho Jo[2], Yoon Shin Park*[1]

[1]Chungbuk 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 model

Hyun-Sook Park*[1], Sunray Lee[1], Yeon Kyung Lee[1], Myoung Hwan Kim[2]

[1]CEFO Co., Ltd., [2]KPC, Republic of Korea

P03-029

Optimization of mesenchymal stem cell spheroids for enhanced angiogenesis

Eun Ji Jeong[2], Ji Suk Choi[1], Min Rye Eom[1], Seong Keun Kwon*[1]

[1]Seoul 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 microenviron ment on mesenchymal stromal cells

Rebecca Landon*[1], Abolfazl Barzegari[2], Nathanael Larochette[1], Virginie Gueguen[2], Hervé Petite[1], Graciela Pavon-Djavid[2], Fani Anagnostou[3]

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P03-031

The therapeutic potential of MSCs administration in naturally aged sarcopenia mouse model

Yu Hsuan Belle WANG[1], Yuk Wai Wayne LEE*[1]

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October 7-8
P04 Biomaterials

P04-039

Development of a mineralized decellularized tissue for soft-hard inter-regional tissue application

Tsuyoshi Kimura*[1], Mika Suzuki[1], Mako Kobayashi[1], Masahiro Okada[2], Takuya Matsumoto[2], Naoko Nakamura3, Yoshihide Hashimoto[1], Akio Kishida[1]

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P04-040

Plasmid dna nanoparticles for oral therapy

Jeong Man Ahn[2], Young Jae Park[1], Jo An Hong[1], Dong Yun Lee[3], Yong Kyu Lee*[1]

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P04-041

Process development for nerve regeneration implant using the 3D bio-printer

Songho Kim[1], Dongwon Seok[1], Chae Hyeon Ryu[1], Inho Kim*[1]

[1]T&R Biofab, Republic of Korea

P04-042

Development of BMP-loaded bioabsorbable microspheres with calcium-binding polymer-coating for high-efficiency transport

Myoung-Hee Kang[1], Min Jae Kim[2], Yeo Song Lee[1], Hien Thai Bao Dieu[1], Min-Ha Choi[1], I Zhen Ma[1], Yan Lee[2], Ji-Ung Park*[1]

[1]Department of Plastic and Reconstructive Surgery, SMG-SNU Boramae Medical Center, [2]Department 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 properties

Ju Hyun Yun[1], Sungryeal Kim[2], Hye-Young Lee[1], Chul-Ho Kim[1], Yoo Seob Shin*[1]

[1]Ajou University, [2]Inha University, Republic of Korea

P04-044

Hydroxyl radical generation mediated antibacterial therapeutics by catechol functionalized hyaluronic acid hydrogels and zinc oxide nanoparticles

Myoung-Hee Kang[1], Seol-Ha Jeong[2], Changha Hwang[2], Min-ha Choi[1], Jiwon Kang[1], Hyoun-Ee Kim[2], Ji-Ung Park*[1]

[1]Department of Plastic and Reconstructive Surgery, SMG-SNU Boramae Medical Center, [2]Department of Materials Science and Engineering, Seoul National University, Republic of Korea

P04-045

Development of cooling system for nerve regeneration implant using biomaterials

Dongwon Seok[1], Chae Hyeon Ryu[1], Songho Kim[1], Inho Kim*[1]

[1]T&R Biofab, Republic of Korea

P04-046

Process development of heterogeneous sheets for nerve regeneration implant

Chae Hyeon Ryu[1], Songho Kim[1], Dongwon Seok[1], Inho Kim*[1]

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P04-047

Senescent cancer cell-derived nanovaccine for cancer therapy

SangJun Moon[1], Jihye Hong[1], Byung-Soo Kim*[1]

[1]Seoul National University, Republic of Korea

P04-048

Fabrication of poly(HEMA-co-MMA) porous scaffold with highly biocompatibility for soft tissue regeneration

Yong Sang Cho[1], Sohyun Ki[1], Jieun Park[1], Byeong Kook Kim[1], Tae-Hyun Kim*[1]

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P04-049

Fabrication of poly(HEMA-co-MMA) scaffold having surface roughness and modulus for soft-tissue engineering

Yong Sang Cho[1], Byeong Kook Kim[1], Sohyun Ki[1], Jieun Park[1], Tae-Hyun Kim*[1]

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P04-050

In situ forming elastin-like polypeptide hydrogel for injectable drug delivery applications

Yeongjin Noh[1], Kangseok Lee[1], Chaenyung Cha*[1]

[1]Ulsan 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 Kang[1], Ji Hye Lee[1], Ji Soo Park[1], Jae Keun Lee[1], Joo Youn Lee*[1]
[1]*Xcell Therapeutics Inc., Republic of Korea*

P04-052
Comparative study of mesenchymal stem cell media for culture reproducibility and consistency
Min Hee Kang[1], Ji Eun Jang[1], Yuyeong Yang[1], Jong Jin Kim[1], Jae Woo Kang[1], Joo youn Lee*[1]
[1]*Xcell therapeutics Inc., Republic of Korea*

P04-053
Applicability of chemically-defined media in hair follicle cell culture for hair loss cell therapy
Ji Soo Park[1], Hong Seok Kang[1], Ji Hye Lee[1], Jae Keun Lee[1], Ju Yeong Hwang[2], Mei Zheng[2], Yong Jin Choi[2], Joo Youn Lee*[1]
[1]*Xcell Therapeutics Inc.,* [2]*Epi 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 Park[1], Jae Bum Park[1], Jeung Soo Huh[1], Jeong Ok Lim*[2]
[1]*Kyungpook national university,* [2]*Kyungpook 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 Yeo[1]
[1]*Korea 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 Lee[1], Da Hyeon Choi[1], Sun-Woong Kang[3], Kang Moo Huh[2], Yoon Shin Park*[1]
[1]*Department of Biological Sciences and Biotechnology, College of Natural Sciences, Chungbuk National University,* [2]*Department of Polymer Science and Engineering, Chungnam National University,* [3]*Research 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 Choi[1], Kyeong Eun Lee[1], Jue-Yeon Lee[3], Yoon Jeong Park[2], Yoon Shin Park*[1]
[1]*Chungbuk National University,* [2]*Seoul National University,* [3]*Nano 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 Alshadidi[1], Sunil Kumar V1, L Aldosari2, AA Chaudhry[5], GC Reilly[4], I U Rehman[3]
[1]*Dental Technology Department, Applied Medical Sciences, King Khalid University, KSA,* [2]*College of Dentistry, King Khalid University, KSA,* [3]*Bioengineering Department, Lancaster University, UK.,* [4]*INSIGNEO institute for in silico Medicine, University of Sheffield, UK,* [5] *Interdisciplinary Research Centre in Biomedical Materials (IRCBM), Pakistan, Saudi Arabia*

P04-059
Design and preparation biodegradable staple for the intestinal suture
Runjie Zhang[1], Ching-Jung Chen[1], Jen-Tsai Liu*[1]
[1]*University of Chinese Academy of Sciences, China*

P04-060
Development of porous PLLA/DCPA short fiber for bone formation
Mao Takadera[2], Koji Yamamoto[1], Yusuke Morita*[1]
[1]*Department of Biomedical Engineering, Doshisha University,* [2]*Graduate School of Life and Medical Sciences, Doshisha University, Japan*

P04-061
Bile acids containing nanoparticle and oral delivery strategies
Kyoung Sub Kim*[1]
[1]*The 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 Mistry[1], Barbara P. Chan*[1]
[1]*Tissue Engineering Lab, Department of Mechanical Engineering, The University of Hong Kong, Pokfulum, 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 Kim[1], Hyewon Kim[1], Hyun Jong Lee[2], Won-Gun Koh*[1]
[1]*Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, Republic of Korea,* [2]*Department 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 Kim[1], Sukwha Kim[2], Jee Hyuk Chung[1], Sungmi Jeon[1], Ki-Hyun Cho[1], Seyeon Lee[1], Byung Joon Kim*[1]
[1]*Division of Pediatric Plastic Surgery, Seoul National University Children's Hospital,* [2]*Department of Plastic Surgery, CHA Bundang Medical Center, Republic of Korea*

P04-067
Application of hybrid graphene oxide and silver nanoparticles in wound healing
Atiqah Salleh[1], Norlaila Mustafa[3], Yeit Haan Teow[2], Ebrahim Mahmoudi[2], Mh Busra Fauzi*[1]
[1]*Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur 56000, Malaysia,* [2]*Department of Chemical and Process Engineering, Faculty of Engineering and Built Environment, UnivesitiKebangsaan Malaysia, Bangi 43600, Malaysia,* [3]*Department 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 Wen[1], Her-Hsiung Huang*[2]
[1]*Institute of Oral Biology, National Yang Ming Chiao Tung University,* [2]*Department of Dentistry, National Yang Ming Chiao Tung University, Chinese Taipei*

P04-069
Towards allogenizing a xenograft: The use of human induced pluripotent stem cells in recellularizing xenogeneic cardiac scaffolds do not activate human naïve neutrophils
Reem AL Hejailan[1], Somaya Al Qattan[1], Futwan AL Mohanna*[1]

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P04-070

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

Ling Qin*[1], Zhi YAO[1], Weihao YUAN[1], Jiankun XU[1], Wenxue TONG[1], Liming BIAN[2]
[1]The Chinese University of HK, [2]South China University of Technology, Hong Kong

P04-071

Biomaterials for enhancing cell survival in low water environment

Lady Barrios Silva*[2], Nik Aliaa[1], Darren Player[1], David Chau[1]
[1]UCL, [2]University College London Hospitals, United Kingdom

P04-072

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

Dr. Ashok Kumar Jangid[1], Dr. Kyobum Kim*[2], Dr. Hitesh Kulhari[3]
[1]Dongguk University, [2]Department of Chemical & Biochemical Engineering, College of Engineering, Dongguk University, Seoul, South Korea, [3]School 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 Park[1], Youngmee Jung*[1]
[1]Korea Institute of Science and Technology (KIST), Republic of Korea

P04-075

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

Sung Sik Hur[2], Kyungmu Noh[1], Ji Hoon Jeong[1], Jae Hong Park[3], Jin Kwon Chung[4], Yongsung Hwang*[1]
[1]Soonchunhyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, Cheonan-si 31151, Korea, [2]Soonchunhyang University, [3]Department of Otorhinolaryngology-Head and Neck Surgery, Soonchunhyang University Cheonan Hospital, Cheonan, Republic of Korea, [4]Department 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 Jaapar[2], Ahmad Fareez Mohd Rawi[2], Andrew Morris[3], Nashiru Billa[4]
[1]UNIVERSITI TEKNOLOGI MARA, [2]University of Nottingham, [3]Dean School of Pharmacy University of Swansea, [4]Professor at Qatar University, College of Pharmacy, Malaysia

P04-077

Bioinks based on recombinant collagen for 3D bioprinting

Jayden Park[2], Yunxiao Liu[1], Eva Loo*[1]
[1]Evonik (SEA) Pte Ltd, [2]Evonik 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 Jin[1], Deepti Rana[2], Jung-Hwan Lee[1], Hae-Won Kim[1]
[1]Dankook University, [2]University 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 Park[1], Kuk Hui Son[2]
[1]Gachon University, [2]Gachon 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 Ke[1], Xi Yang*[1]
[1]Novaprint Therapeutics, China

P05-012

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

Hanse Goh[2], In Kyong Shim[1], Yu Na Lee[1], Sehui Jeong[1], Jeong Eun Kim[1], Song Cheol Kim*[3]
[1]Asan Institute for Life Sciences, Asan Medical Center, University of Ulsan College of Medicine, [2]UNIVERSITY OF ULSAN, [3]Department 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 Nguyen[1], Mimosa Peltokangas[1], Pauliina Juntilla[1], Siiri Rissanen[1]
[1]Finnadvance, 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 Kim[1], Minhyuk Kim[1], Moon Suk Kim*[1]
[1]Ajou university, Republic of Korea

P06-027

The senolytic drug JQ1 removes senescent cells via ferroptosis

SeokHyeong Go[1], Mikyung Kang[4], Sung Pil Kwon[3], Mungyo Jung[1], Ok Hee Jeon[2], Byung-Soo Kim*[1]
[1]Seoul National University, [2]Korea University of College of Medicine, [3]Korea Institute of Science and Technology, [4]Harvard Medical School, Republic of Korea

P06-028

Development of bioreactor system for full-thickness corneal tissue engineering

Changmo Hwang*[1], Haneul Lee[3], Heungwon Tcha[2]
[1]Univ. Of Ulsan College Of Medicine, [2]Department of Ophthalmology, Asan Medical Center, [3]Biomedical 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 Roh[1], Da-Seul Kim[2], Jun Hyuk Kim[1], Inbo Han*[1]
[1]CHA University School of Medicine, [2]CHA 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 Park[1], Hyun Cheol Bae[1], Won-Young Cho[1], Ha Ru Yang[1], Sun Young Wang[1], You Jeong Kim[1], Hyuk-Soo Han*[1]
[1]Seoul National University Hospital, Republic of Korea

P06-031

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

Choyeon Park[1], Byung-Moo Min[1], Minju Song[2], Eunhye Lee[1], Sun-Young Kim*[1]
[1]Seoul National university, [2]Dankook 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

Yu Ri Hong[2], Kyueui Lee[3], Jeong Ok Lim[1], Chang-Wug Oh*[1]
[1]Kyungpook National University School of Medicine, Kyungpook National University Hospital, [2]Kyungpook National University Hospital, [3]Department of Chemistry, Kyungpook National University, Republic of Korea

P06-033

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

MinJi Cho[1], Ju Kwang Choi[1], Kyeong Eun Lee[1], Jiwon Park[1], Da Hyeon Choi[1], Yoon Shin Park*[1]
[1]Chungbuk National University, Republic of Korea

P06-034

Optimization of the purification method for skeletal muscle-derived fibroblast

MinJi Cho[1], Ju Kwang Choi[1], Jiwon Park[1], Da Hyeon Choi[1], Kyeong Eun Lee[1], Yoon Shin Park*[1]
[1]Chungbuk 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 Ahn[2], Hye Jin Hong[2], Jae-Min Cho[1], Yeo-Jun Yoon[1], DoJin Choi[1], Soohyun Lee[1], Hwajung Lee[2], Jae-Yol Lim[1], Won-Gun Koh*[2]
[1]Department of Otorhinolaryngology, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, [2]Department of Chemical and Biomolecular Engineering, Yonsei University, Seoul, Republic of Korea

P06-038

Wound healing applications of sericin/CMC/MSM incorporated hydrogel

Hyun Lyung Jeong*[1], Jang soo Suh[1]
[1]Innoregen,Inc, Republic of Korea

P06-039

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

Inwoo Son[1], Yongjun Jang[1], Myeongjin Kang[1], Yongdoo Park*[1]
[1]Korea University, Republic of Korea

P06-040

Myoblast alignment and differentiation in tissue-engineered skeletal muscle fiber

Takuya Hattori[2], Koji Yamamoto[1], Yusuke Morita*[1]
[1]Department of Biomedical Engineering, Doshisha University, [2]Graduate School of Life and Sciences, Doshisha University, Japan

P06-042

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

Deuk-Yeon Lee[1], Yam Prasad Aryal[1], Elina Pokharel[1], Tae-Young Kim[1], Anna Kim[1], Chang-Hyeon An[1], Jae-Kwang Jung[1], Jae-Young Kim[1], Seo-Young An*[1]
[1]Kyungpook National University, Republic of Korea

P06-043

Functional evaluation of developmental signaling molecules for dentin regeneration

Moo-Keun Song[1], Elina Pokharel[1], Tae-Young Kim[1], Jung-Hong Ha[1], Jae-Young Kim[1], Chang-Hyeon An*[1]
[1]Kyungpook National University, Republic of Korea

P06-044

Expression pattern and developmental function of Piezo1 in salivary gland morphogenesis

Elina Pokharel[1], Tae-Young Kim[1], Anna Kim[1], Ji-Youn Kim[2], Jae-Young Kim[1], Jae-Kwang Jung*[1]
[1]Kyungpook National University, [2]Gachon University, Republic of Korea

P06-045

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

Vignesh Krishnamoorthi Kaliannagounder[1], Chan Hee Park[2], Cheol Sang Kim*[1]
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P06-047

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

Kyoung-Mi Lee[3], Jae Wan Suh[4], Eun Ae Ko[1], Dong Suk Yoon[1], Kwang Hwan Park[1], Nam Hee Kim[2], Jong In Yook[2], Jin Woo Lee*[1]
[1]Department of Orthopaedic Surgery, Yonsei University College of Medicine, [2]Oral Cancer Research Institute, Yonsei University College of Dentistry, Seoul, Korea, [3]Yonsei university college of medicine, [4]Department of Orthopaedic Surgery, Dankook University Hospital, Republic of Korea

P06-048

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

Young Ju Son[1], Ji Suk Choi[1], Min Rye Eom[1], Eun Ji Jeong[1], Jeong Hoon Lee[1], Guk Yeon Jo[1], Seong Keun Kwon*[1]
[1]Seoul 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 Lee[1], Haeshin Lee[3], Ji Hyun Ryu*[2]
[1]Department of Physiology, School of Dentistry and Dental Research Institute, Seoul National University, 2Department of Carbon Convergence Engineering, Wonkwang University, [3]Department of Chemistry, Center for Nature-inspired Technology (CNiT), Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

P06-050

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

Viorica Patrulea*[1], Carla V. Fuenteslópez[2], Hua (Cathy) Ye[2]
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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 Park[1], Eric Nguyen[1], Haig Pakhchanian[1], Davide Ortolan[1], Nikhil Vettikatu[1], Devika Bose[1], Ruchi Sharma[1], Arvydas Maminishkis[1], Kapil Bharti*[1]
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P07-002

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

Daniel Roxby*[1], Jiahui Chen[1], Jerome Tan Zu Yao[1], Tan Dai Nguyen[2], Sing Yian Chew[1], Jongyoon Han[2]
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P07-003

Natural scaffolds for cultured meat production

Deepak Choudhury*[1], Priyatharshini Murgan[1], Yap Wee Swan[1], Ratima Suntornnond[1], Satnam Singh[1]
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P07-004

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

HUN LEE*[1], Yoonkyung Park[1], Jeong Hye Sunwoo[1], Whanseo Lee[1], Jin Kim[1], Eun-Ah Ye[1], Jae Yong Kim[1], Hungwon Tchah[1], Eunju Kang[2], Seongjun So[2]
[1]*Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine,* [2]*Department of Biomedical Science, College of Life Science and Center for Embryo and Stem Cell Research, CHA Advanced Research Institute, CHA University, Republic of Korea*

P07-005

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

Trung Xuan Ngo*[1], Eiko Uno[1], Yui Ueno[2], Shigeyuki Ohta[2], Hiroyuki Nishida[2], Hideki Nonaka[2], Kazuma Suda[1], Tsuyoshi Ishii[1]
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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 Nguyen[1], Jiahui Chen[5], Quan Liu[4], Sing Yian Chew[3], 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 Sungwallek[2], Kazuhiro Fukumori[1], Atsuhiro Saito[1], 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 Oh[1], Yang Hee Kim[1], Song Lee[1], Song Cheol Kim*[1]
[1]*Asan 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 Jeon[1], Sung Won Kim*[2]
[1]*Department of Biomedicine and Health Science, College of Medicine, The Catholic University of Korea,* [2]*Department of Otolaryngology-Head and Neck Surgery, College of Medicine, Seoul St. Mary's Hospital, The Catholic University of Korea, Republic of Korea*

P08-005

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

Takaki Matsumoto[1], Mee-Hae Kim[1], Masahiro Kino-oka*[2]
[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*

P08-006

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

Junya Kamioka[2], Kei Sasaki[5], Koichi Baba[6], Tomoyo Tanaka[1], Yosuke Teranishi[1], Takahiro Ogasawara[1], Masukazu Inoie[1], Ken-ichiro Hata[1], 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 Kaneiwa[1], Koshi Oyanagi[1], Yuki Takagi[1], Kazuhiro Ikeda[1]
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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 Lee[1], Hye Guk Ryu[2], Yunji Lee[1], Ju An Park[1], Seongju Kim[4], Chang Eon Lee[2], Kyung-Ha Lee[3], Sungjune Jung*[1]
[1]Department of Materials Science & Engineering, Pohang University of Science and Technology (POSTECH), [2]Division of Cosmetic Science and Technology, Daegu Haany University, [3]Department of Molecular Biology, Pusan National University, [4]Department 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 Kim[1], Jin Man Kim*[2]
[1]Department of Conservative Dentistry, Yonsei University College of Dentistry, [2]Department of Oral Microbiology and Immunology, School of Dentistry and Dental Research Institute, Seoul National University, Republic of Korea

P09-015

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

Sung-Soo Park[1], Seunghoon Han*[2]
[1]Seoul 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 Park[1], Geunhye Kim[3], Jaewook Lee[1], Dongwoo Khang*[2]
[1]Lee Gil Ya Cancer and Diabetes Institute, Gachon University, [2]Department of Physiology, College of Medicine, Gachon University, [3]Gachon 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 Kim[1], YoungJin Kim[1], Galina Khan[1]
[1]Soonchunhyang University Bucheon Hospital, Republic of Korea

P09-018

Small molecule mediated intervertebral disc repair via regulation of proteoglycan metabolism

Victor Leung*[1], Yuen-Kee Tsui[1], Danny Chan[1], Kenneth Cheung[1], Yi SUN[1]
[1]The 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]
[1]The Chinese University of Hong Kong, China

P09-020

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

Sujin Choi[1], Soonchul Lee[1], Sin Hyung Park[3], Young-Hoon Han[4], Junwon Choi[2], Issac Kim[1], Jusung Lee[1], Hyun-Ju An*[1]
[1]CHA University, [2]Ajou University, [3]SOON CHUN HYANG University, [4]Korea 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 Schmidt[1], Vivien Wiltzsch[1], Daniela Sofia Bastos Dias[2], Jörg Lehmann[1], Jan Baumbach[3], Patrina Su Ping Poh[2], Stefan Kalkhof*[1]
[1]Department of Preclinical Development and Validation, Fraunhofer Institute for Cell Therapy and Immunology IZI, [2]Julius Wolff Institute of Biomechanics and Musculoskeletal Regeneration, Charité Berlin, [3]Institute 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 Chen[1], Jen-Tsai Liu[1], Ching-Jung Chen*[1]
[1]University 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]
[1]Sungkyunkwan University, Republic of Korea

P10-012

Development of hybrid skin model to evaluate UV-protective effects

Hiroki Masuhara[2], Koji Yamamoto[1], Yusuke Morita*[1]
[1]Department of Biomedical Engineering, Doshisha University, [2]Graduate School of Life and Medical Sciences, Doshisha University, Japan

P10-013

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

Eun Hye Lee[1], So Young Chun[2], Bo Hyun Yoon[1], Minji Jeon[1], Hyun Tae Kim[1], Jae-Wook Chung[1], Jun Nyung Lee[1], Tae Gyun Kwon[1], Bum Soo Kim[1], Yun-Sok Ha*[1]
[1]Kyungpook National University, [2]Kyungpook National University Hospital, Republic of Korea

P10-014

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

Tianyi Sun[1], Rencai Liu[1], Ching Jung Chen*[1]
[1]University 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]
[1]Korea University, Republic of Korea

P10-016

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

Jialin Xin[1], Ching-Jung Chen[1], Jen-Tsai Liu*[1]
[1]University 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 Kim[1], Jiyeon Han[1], Hyeryun Namkung[1], Sungwoo Kim[1], Seung-Yup Ku*[1]
[1]Seoul National University Hospital, Republic of Korea

P10-018

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

Jagannath Mondal[1], Vishnu Revuri[3], Jeong Man An[2], Yong-kyu Lee*[1]
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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 Choi[1], Hye Min An[3], Young Koo Lee*[2]
[1]SoonChunHyang University, [2]SoonChun Hyang University Bucheon Hospital, [3]SoonChunHyang 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 An[1], Young Suk Choi[1], Young Koo Lee*[2]
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PS01-003

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

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PS01-004

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

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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 Yoo[1], Jae Seo Lee[2], Haram Nah[2,4], Sung Jun Min[2], Seung Hyeon Kim[2,4], Ho-Jin Moon[3], Il Keun Kwon*[3]
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PS01-007

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

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PS01-008

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

Seung Hyeon Cho[1], Min Ji Kim[1], Jin Ho Lee[2], Se Heang Oh*[1]
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PS01-009

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

Min Ji Kim[1], June-Ho Byun[3], Jin Ho Lee[2], Se Heang Oh*[1]
[1]Dankook University, [2]Hannam University, [3]Gyeongsang 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 Song[1], Min Ji Kim[1], So Young Jeon[3], Jin Ho Lee[2], Se Heang Oh*[1]
[1]Dankook University, [2]Hannam University, Republic of Korea, [3]Kyungpook National University Hospital, Republic of Korea

PS01-011

Fabrication and characterization of cell spheroid system containing porous microparticles

Jae Seok Park[1], Jin Ho Lee[2], Min Ji Kim[1], Yeoung Jo Jeoung[2], Se Heang Oh*[1]
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PS01-012

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

Han Byeol Kim[1], Min Ji Kim[1], June Ho Byun[3], Jin Ho Lee[2], Se Heang Oh*[1]
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PS01-013

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

ShinYoung PARK[1], MinJi Kim[1], SungWook Kang[4], Sang Youn Song[2], DongHee Kim[2], JinHo Lee[3], SeHeang Oh*[1]
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PS01-014

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

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PS01-015

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

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PS01-016

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

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PS01-017

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

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PS01-018

Enhancement of muscle tissue regeneration supplemented with bioactive components

Hanjun Hwangbo[2], JiUn Lee[1], Hyeongjin Lee[1], JaeYoon Lee[1], WonJin Kim[1], Youngwon Koo[1], JuYeon Kim[1], GeunHyung Kim*[1]
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PS01-019

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

Chang sung Kim*[1], Garam Jung[2], Young woo Song[2]
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PS01-020

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

SuHyeok Lee[1], Hyeongjin Lee[1], SooJung Chae[1], Dongyun Kim[1], Hanjun Hwangbo[1], Amin Orash Mahmoudsalehi[1], GeunHyung Kim*[1]
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PS01-022

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

MoHan Pei[1], Hyeongjin Lee[1], JaeYoon Lee[1], SooJung Chae[1], JuYeon Kim[1], Dongyun Kim[1], Hanjun Hwangbo[1], SeoYul Jo[1], GeunHyung Kim*[1]
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PS01-023

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

Narae Jung[1], Jae-han Park[1], Young-bum Park*[1]
[1]Yonsei 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 Fadilah[1], Mh Busra Fauzi[2], Manira Maarof*[1]
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PS01-025

A biphasic construct for osteochondral complex using modified transwell model

Chengchong Ai[1], 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 μCT non-destructive analysis

YONGJUN JIN[1], Do Young Park[1], Sujin Noh[5], Dong Il Shin[4], Hee-Woong Yun[3], Byong Hyun Min*[2]
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PS01-027

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

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PS01-028

Exosome-encapsulating tissue-adhesive patch for diabetic wound regeneration

Seung Yeop Han[1], Eun Je Jeon[1], Soohwan An[1], Young Seok Song[1], 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 Jung[1], Mikyung Kang[1], Byung-Seok Kim[1], Jihye Hong[1], Cheesue Kim[1], Choong-Hyun Koh[1], Garam Choi[1], Yeonseok Chung[1], Byung-Soo Kim*[1]
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PS02-002

Human hair keratin gradient hydrogels for skin regeneration

Marin Yee Zhen Lin*[1,2], Ng Kee Woei[1,3,4]
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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

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PS02-005

Even tissue formation by uniform cell distribution during 3D bioprinting

MST Rita Khatun[1], Ji-Hyeon Kim[1], Sung-Yeon Kum[1], Hyong-Uk Ham1, Hyerim Jo[1], Amitava Bhattacharyya[3], Insup Noh[2], Insup Noh*[2]
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PS02-006

Kombucha-cultured nanocellulose for 3D bioprinting

Amitava Bhattacharyya[2], Ji-Hyeon Kim[1], Sun-Ho Kim[1], Jun-Won Huh[1], Jiae Son[1], Sechan Oh[1], Insup Noh*[3]
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PS02-007

Isolation of colon cancer cells using membrane filtration method

Zhe-Wei Zhu*[1], Akon Higuchi[1]
[1]National Central University, Chinese Taipei

PS02-008

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

Da-Na Lee[1], Jin-Young Park[1], Young-Wook Seo[1], Xiang Jin1, Jongmin Hong[2], Amitava Bhattacharyya[2], Insup Noh[2], 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 Tomioka[1], 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 Seo[1], Jin-Young Park[1], Da-Na Lee[1], Xiang Jin[1], Jae-Kook Cha[1], Jeong-Won Paik[1], Seong-Ho Choi*[1]
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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

Wan Chiew Ng[1], Yogeswaran Lokanathan[2], Fauzi Mh Busra[2], Marina Mat Baki[1], Mawaddah Azman*[1]
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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'oh[2], Mohd Fauzi Mh Busra[1], Rohaina Che Man[5], Muhammad Ramdzan Buyong[4], Norzana Abd Ghafar[6], Min Hwei Ng[1], 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 interconne ctivity for bone tissue engineering

Rigoberto Lopez Reyes[2], Min-Soo Ghim[1], Nae-Un Kang[1], Young-Sam Cho*[3]

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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

Negar Mahmoudi[1], Alan Harvey[5], Clare Parish[4], Richard Williams[3], David Nisbet*[2]
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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

Yogendra Pratap Singh*[1], Prof. Sudip Dasgupta[1]
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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 Iim[2], Cesar Alcala-Orozco[2], Habib Joukhdar[3], Jelena Rnjak-Kovacina[3], Tim Woodfield[2], Lin-Hua Jiang[5], David Wood[1], Claire Brockett[4], Xuebin Yang[1]
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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 Yue[1], Xiao Liu[1], Patrick T. Coates[2], Chris Drogemuller[2], Gordon Wallace[1]
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PS02-020

3D printed natural hydroxyapatite-embedded titanium implants promoting osseointegration

Juo Lee[1], Sungmin Lee[1], Jungsil Kim[1], Hoon Seonwoo*[1]
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PS02-021

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

Eunbee Cho[1], Kyeongsik Choi[1], Sungwan Park[1], Hoon Seonwoo*[1]
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PS02-022

Natural killer cell membrane coated gold nanoparticles for cell membrane immunotherapy

Seojeong Yun[1], Rohbin Choi[1], Kyobum Kim*[1]
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PS02-023

The fabrication of highly porous cell-laden structure

JIUN LEE[1], SeoYul Jo[1], Hyeongjin Lee[1], WonJin Kim[1], Young Won Koo[1], Hanjun Hwangbo[1], 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 Koo[1], Hyeongjin Lee[1], WonJin Kim[1], JiUn Lee[1], SeoYul Jo[1], GeunHyung Kim*[1]
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PS02-025

Fabrication of 3D cell-constructs using photocrosslinkable bioin

SooJung Chae[1], Hyeongjin Lee[1], Dongyun Kim[1], Hanjun Hwangbo[1], Amin Orash Mahmoudsaiehi[1], SeoYul Jo[1], Mohan Pei[1], 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 Kang[1], Seong Yeong An[2], Woo Gyeong Kim[2], So Yeon Kim[3], Yu-shik Hwang*[1]
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PS02-027

Topical bioadhesive hemostatic agents for bleeding site care at visceral surgeries

Jaeyun Lee[2], Eun Jin Kim[1], Ki Joo Kim[1], Jong Won Rhie[1], Kye Il Joo[3], Hyung Joon Cha*[2]
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PS02-028

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

JeongWoo Seo[1], SungHan Jo[1], SeonHwa Kim[1], Byeong Hoon Choi[1], 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 Lee[1], Soon Hee Kim[1], Ji Seung Lee[1], Young Jin Lee[1], Ok Joo Lee[1], Olatunji Ajiteru[1], Md. Tipu Sultan[1], Chan Hum Park*[1]
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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 Heo[1], Ji Seung Lee[1], Hae Sang Park[2], Hanna Lee[1], Chan Hum Park*[1]

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PS02-032

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

Ojun Kwon[1], Young Jin Lee[1], Md Tipu Sultan[1], Olatunji Ajiteru[1], Chan Hum Park*[1]
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PS02-033

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

SeoYul Jo[1], JiUn Lee[1], Hyeongjin Lee[1], WonJin Kim[1], Young Won Koo[1], Hanjun Hwangbo[1], GeunHyung Kim*[1]
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PS02-034

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

Jang Min Kim[1], Ok Joo Lee[1], Ji Seung Lee[1], Hanna Lee[1], 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 Ju[1], Kwang-Ho Lee[1], Cheol-Hwi Kim[1], Tae- Hyung Kim*[1]
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PS02-036

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

Jeong-Ki Kim[1], Dong-Hwee Kim*[1]
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PS02-037

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

Kallista Wong*[1]
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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

Michiya Matsusaki*[1], Zheng-Tian Xie[1]
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PS02-040

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

Jinfeng Zeng[1], Michiya Matsusaki*[1]
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PS02-041

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

Juhyeon Jo[1], Dong-Hwee Kim*[1]
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PS02-042

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

Seung Kyeum Cho[2], Yun Jin Young[1], Cha Hyung Joon*[1]
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PS02-043

Cellulose-based tissue adhesive hydrogels for hemostatic application

Jihoon Jeon[1], Yi Sun Choi[1], Soohwan An[1], Mi Jeong Lee[1], Seung Yeop Han[1], Yunsu Bae[1], Seung-Woo Cho*[1]
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PS02-044

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

Min-Gyun Kim[1], Seon-Jin Kim[1], Seung-Won Kang[1], Seo-Yeon Kim[1], Sang-Gyun Nam[1], Hee-Gyeong Yi*[2]
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PS02-045

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

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PS02-046

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

Jae-Seok Kim[1], Hun-Jin Jeong[3], Hyoryung Nam[2], Sung Keon Cho[2], So-Jung Gwak[1], Hyun-Ha Park[1], Hyung Woo Kim[1], Kyoung Duck Seo[1], Young-Sam Cho[1], Jinah Jang[2], Seung-Jae Lee*[1]
[1]Wonkwang University, [2]Pohang University of Science and Technology, [3]Columbia University, Republic of Korea

PS02-047

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

Habib Joukhdar*[1], Zac Och[1], Hien Tran[1], Scott Hebenton[1], Khoon Lim[2], Megan Lord[1], Jelena Rnjak-Kovacina[1]
[1]Graduate School of Biomedical Engineering, University of New South Wales, [2]Light Activated Biomaterials (LAB) Group, Department of Orthopaedic Surgery and Musculoskeletal Medicine, University of Otago, Australia

PS02-048

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

Seong-Beom Han[1], Dong-Hwee Kim*[1]
[1]Korea University, Republic of Korea

PS02-049

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

Samantha Lo[1], Ebrahim Mahmoudi[2], Manira Maarof[1], Mh Fauzi Mh Busra*[1]
[1]Center for Tissue Engineering and Regenerative Medicine, The National University of Malaysia (Universiti Kebangsaan Malaysia), [2]Department of

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 Heng[1], Muhammad Da'in Yazid[5], Mohd Faizal Ahmad[4], Mohd Ramzisham Abdul Rahman[3], Nadiah Sulaiman*[2]
[1]Universiti Kebangsaan Malaysia, [2]Centre for Tissue Engineering and Regenerative Medicine (CTERM), Universiti Kebangsaan Malaysia (National University of Malaysia), [3]Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, [4]Department of Obstetrics & Gynaecology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, [5]Centre for Tissue Engineering and Regenerative Medicine (CTERM), Universiti Kebangsaan Malaysia

PS02-051

Dermal extracellular matrix-derived nanoparticles improve the biological relevance of gelatine bioinks for future wound healing applications

Ali Smandri[1], Ng Min Hwei[1], Mh Busra Fauzi *[1]
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PS02-052

The development of multifunctional nerve guidance conduit using milk derived protein for peripheral nerve regeneration

Jin Jeon[1], Min Suk Lee[3], Hee Seok Yang*[2]
[1]Department of Nanobiomedical Science & BK21 FOUR NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea and Center for Bio-Medical Engineering Core Facility, Dankook University, Cheonan, 31116, [2]Department of Nanobiomedical Science & BK21 FOUR NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, [3]Department of Nanobiomedical Science & BK21 FOUR NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea and Medical Laser Research Center, College of Medicine, Dankook University, Cheonan 31116, Republic of Korea, Republic of Korea

PS02-053

Hydroxy-conjugated bifacial scaffolds for localized drug delivery system

Yongwook Son[1], Mihyun Kim[1], Yoojin Kim[1], Jaehyung Jang*[1]
[1]Yonsei Univ., Republic of Korea

PS02-054

Engineering autologous vascularized thrombus implants for enhancing cutaneous wound healing

Su Hyun Jung[1], Seyong Kwon[1], Bong Hwan Jang[1], Sung Jin Park[1], Joo Hun Kang*[1]
[1]UNIST (Ulsan National Institute of Science and Technology), Republic of Korea

PS02-055

Fabrication of phycocyanin based fibrous membrane coated fish collagen for bone regeneration

Se-Chang Kim[1], Seong-Yeong Heo[4], Gun-Woo Oh[3], Ji-Won Jeong[1], Won-Kyo Jung*[2]
[1]Pukyong National Univetsity, [2]Pukyong national univetsity, [3]National Marine Biodiversity Institute of Korea, 4Korea Institute of Ocean Science & Technology, Republic of Korea

PS02-056

A bio-adhesive hyaluronic acid hydrogel for pH-versatile biomedical applications

Soohwan An[1], Eun Je Jeon[1], Seung Yeop Han[1], Jihoon Jeon[1], Mi Jeong Lee[1], Sooyeon Kim[1], Mikyung Shin[2], Seung-Woo Cho*[1]
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PS02-057

Acellular matrix film incorporating phlorotannins from Eckloinia cava suppressed post-implantation inflammatory responses

Tae-Hee Kim[1], Seong-Yeong Heo[5], Gun-Woo Oh[4], Won Sun Park[3], Il-Whan Choi[2], Hyun Wook Kang[1], Huyn-Woo Kim[1], Young-Mog Kim[1], Sung-Han Jo[1], Sang-Hyug Park[1], Won-Kyo Jung*[1]
[1]Pukyong National University, [2]Inje University, [3]Kangwon National University School of Medicine, [4]National Marine Biodiversity Institute of Korea, [5]Jeju Marine Research Center, Korea Institute of Ocean Science & Technology (KIOST), Republic of Korea

PS02-058

Fish collagen/PCL nanofibrous scaffolds with cross-linked chitooligosaccharides for full-thickness wound healing

Dong-Joo Park[1], Pathum Chandika[1], Gun-Woo Oh[3], Seong-Yeong Heo[2], Tae-Hee Kim[1], Min-Sung Kim[1], Seung-Hee Moon[1], Won-Kyo Jung*[1]
[1]Pukyong National University, [2]Korea Institute of Ocean Science & Technology, [3]National Marine Biodiversity Institute of Korea, Republic of Korea

PS02-059

Ovine collagen type-I (OTC-I) biomatrix integrated with antibacterial coating for rapid treatment in diabetic wound care management

Nor Amirrah Ibrahim[1], Mohd Farhanulhakim Mohd Razip Wee[2], Mh Busra Fauzi*[1]
[1]Centre for Tissue Engineering and Regenerative Medicine, Universiti Kebangsaan Malaysia, [2]Institute of Microengineering and Nanoelectronics, Universiti Kebangsaan Malaysia, Malaysia

PS02-060

Fabrication of antioxidant and anti-inflammatory hydrogel based on fish skin gelatin/oxidized hyaluronate for accelerated wound healing

Dong-Joo Park[1], Seung-Hee Moon[1], Won-Kyo Jung*[1]
[1]Pukyong National University, Republic of Korea

PS02-061

Fabrication of injectable iron(III) crosslinked hyaluronic acid/pectin hydrogel with antimicrobial activities

Nam-Gyun Kim[1], Won-Kyo Jung*[1]
[1]Pukyong 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]
[1]University of Oxford, United Kingdom

PS02-063

Decellularized plant and fungal-based scaffolds for the *in vitro* production of bovine meat

Hyunjin Kim[1], Rakesh Bhaskar[1], Kannan Badri Narayanan[1], Soyeon Won[1], Abdulrahman Sharwani[1], Sungsoo Han*[1]
[1]Yeungnam University, Republic of Korea

PS02-064

3D bioprinting of islet-like aggregates using dual- crosslinked hydrogel with promoted biofunctionality and enhanced shape stability

Yeonggwon Jo[1], Hyoryung Nam[1], Jinah Jang*[1]
[1]Pohang University of Science and Technology (POSTECH), Republic of Korea

PS02-065

Dual controlled photocrosslinkable and photodegradable gelatin-ased hydrogel

Min Chun Tsai1, Lo Yuan Liu[1], Ying Chieh Chen*[1]
[1]*Department 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 Lee[1], Dieu Linh Tran[1], Thi Phuong Le[1], Dong Hwan Oh[1], Ki Dong Park*[1]
[1]*Department of Molecular Science and Technology, Ajou University, Suwon 16499, Republic of Korea*

PS02-067

3D printing of biohybrid electrical stimulation platform to promote insulin secretion of pancreatic β cell

Jihwan Kim[1], Uijung Yong[1], Jinah Jang*[1]
[1]*POSTECH, Pohang, Gyeongbuk, South Korea, Republic of Korea*

PS02-068

Enzyme-based on-demand photo-cross-linkable hydrogel for image-guided vascular embolization

Han Jungmin[1], Kim Suhwan*[1]
[1]*Donga Univ, Republic of Korea*

PS02-069

Development of light-blocking nanofiber membrane for a three-dimensional _in vitro_ angiogenesis model capable of real-Time selective imaging

Byeong-Ung Park[1], Dong Sung Kim[3], Hong Kyun Kim*[2]
[1]*Kyungpook national university,* [2]*Kyungpook national university hospital, 3Pohang University of Science and Technology (POSTECH), Republic of Korea*

PS02-070

Development of silk-based cultured meat scaffold with aligned fibrous texture

Xuan Hao Tan*[1], Reuben Chua[1], James Goh Cho Hong[1]
[1]*National University of Singapore, Singapore*

PS02-071

Harnessing the in vivo inflammatory response for tissue engineering

Li Yenn Yong*[1], Shahow Shawki[1], Jared McSweeney[1], Jonny Blaker[1], Jason Wong1, Brian Derby[1]
[1]*University 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 Kim[1], Seul-Gee Lee[2], Songhyun Lim[1], Mungyo Jung[1], Sung Pil Kwon[1], Jihye Hong[1], Mikyung Kang[1], Hee Su Sohn[1], Seokhyeong Go[1], Sangjun Moon[1], Seung-Jun Lee[2], Jung-Sun Kim[2], Byung-Soo Kim*[1]
[1]*Seoul National University,* [2]*Yonsei University College of Medicine, Republic of Korea*

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 Park[1], June-Ho Byun*[1]
[1]*Gyeongsang National Univ., Republic of Korea*

PS03-004

Tumor intracellular microenvironment-responsive nanoparticles for magnetically targeted chemotherapy

Shameer Pillarisetti[1], Kang Moo Huh[2], In-Kyu Park*[1]
[1]*Department of Biomedical Sciences, Chonnam National University Medical School, 264, Seoyang-ro, Jeollanam-do, 58128, Republic of Korea.,* [2]*Department 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 Kim[1], Hye Jin Kim[1], Sujin Lee[1], Hui Bang Cho[1], Sujeong Lee1, Keun-Hong Park*[1]
[1]*CHA 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 Koba[1], Masahiko Nakamoto[1], Michiya Matsusaki*[1]
[1]*Osaka University, Japan*

PS03-007

Cell-favorable protein-based adhesive microcapsules for NK cells-mediated cancer immunotherapy

Hyun Sun Choi[1], Eunseo Kim[1], Hyomin Lee[1], Hyung Joon Cha*[1]
[1]*POSTECH, Republic of Korea*

PS03-008

Click chemistry complex drug delivery system using tissue extracellular matrix for the anti-tumor therapy

Sung-Han Jo[1], Muhammad Gulfam[2], Byeong-Hoon Choi[1], RAISSA MUNDERERE[1], Ye-Jin Kim[1], Kwon Taek Lim[2], Sang-Hyug Park*[1]
[1]*Industry 4.0 Convergence Bionics Engineering, Pukyong National University,* [2]*Department of Display Engineering, Pukyong National University, Republic of Korea*

PS03-009

Transdermal delivery of hyaluronate based upconverting nanoparticle

Hye Eun Choi[1], Ki Su Kim*[1]
[1]*Pusan 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 Truong[1], Phuong-Hoa Tran[1], Sung-Min Jeon[2], Duy-Binh Tran[3], Su-Guen Yang*[2]
[1]*Department of Biomedical Science, BK21 FOUR Program in Biomedical Science and Engineering, Inha University College of Medicine, Incheon 22212, Korea,* [2]*Department of Biomedical Science, Translational Research center, Inha University Hospital, Incheon, Korea,* [3]*Inha 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 Yang[1], Kyung-Ju Shin[1], Yixin Jiang[1], Su-Geun Yang*[1]
[1]*Department of Biomedical Science, BK21 FOUR Program in Biomedical Science and Engineering, Inha University College of Medicine, Incheon 22212, Republic of Korea*

PS03-012

An organ-on-a-chip approach for efficient phage display biopanning under physiological conditions

Jeong-Won Choi[1], Kyungha Kim[1], Chun Gwon Park[2], Taejoon Kwon[1], Tae-Eun Park*[1]
[1]Ulsan National Institute of Science and Technology, [2]Sungkyunkwan University, Republic of Korea

PS03-013

Fabrication of dual-drugs loading liposomes stimulated by physical activation

Sujeong Lee[1], Hye Jin Kim[1], Sujin Lee[1], Hui Bang Cho[1], Hye-Ryoung Kim[1], Keun-Hong Park*[1]
[1]CHA University, Republic of Korea

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 mode

Jung-Kyun Choi[1], Haeun Chung[1], Seung-ja Oh[1], Sang- Heon Kim*[1]
[1]KIST (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 Kim[1], Ju Hyun Park*[1]
[1]Department of Biomedical Science, Kangwon National University, Chuncheon-si, Republic of Korea, Republic of Korea

PS04-004

3D spheroids of mesenchymal stem cells attenuate neuropathic pain mediated by chronic constriction injury in mice

Nayeon Lee[1], Jae Kyung Lim[1], Jae Ho Kim*[1]
[1]Department of Physiology, School of Medicine, Pusan National University, Republic of Korea

PS04-005

Glioblastoma recurrence by neurotransmitters from abnormal neuronal firing via electrical stimulation

Ji Yeon Lee[1], Bon Il Koo[1], Trang Huyen Le-Kim[1], Yoon Sung Nam*[1]
[1]Korea 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 Lee[1], Ha Yeong Kim[1], Soo Yeon Jung[1], Han Su Kim*[1,2]
[1]Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Ewha Womans University, 1071 Anyangcheon-ro, Yangcheon-gu, Seoul 07985, Republic of Korea, [2]Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul 03760, Republic of Korea, Republic of Korea

PS04-007

Prevention of diet-induced obesity by adipose tissue browning using extracellular vesicles from stem cells during beige adipogenic differentiation

YEEUN YUN[1], Seung Yeop Youn[1], Yong Woo Cho*[1]
[1]Hanyang Univ., Republic of Korea

PS04-008

Human neural progenitor cell differentiation into spiral ganglion neurons for sensorineural hearing loss

Nathaniel Carpena[3], Celine Abueva[1], So-Young Chang[1], Ji-Eun Choi[2], Jae Yun Jung[2], Min Young Lee*[4]
[1]Beckman Laser Institute Korea, College of Medicine, Dankook University, Cheonan, South Korea, [2]Beckman Laser Institute Korea, [2]Department of Otorhinolaryngology- Head & Neck Surgery, College of Medicine, Dankook University, Cheonan, South Korea, [3]Dankook University, [4] Beckman Laser Institute Korea,

PS04-010

Three-dimensional environment improves efficiency of chemically-induced direct cardiac reprogramming

Seung Ju Seo[2], Jeong Hyun Heo[1], Yoonhee Jin*[1]
[1]Department of Physiology, Yonsei University Medical College, [2]Department of Physiology, Graduate School of Medical Science, Brain Korea 21 Project, Yonsei University College of Medicine, Republic of Korea

PS04-011

Blood outgrowth endothelial cells (BOECs) in re- endothelialization of human saphenous veins (hSV): An ex *vivo model*

Atiqah Haron[1], Ubashini Vijakumaran[1], Muhammad Dain Yazid[1], Mohd Ramzisham Abdul Rahman[2], Hairulfaizi Haron[2], Nur Ayub Md Ali[2], Muhammad Ishamuddin Ismail[2], Nariah Sulaiman*[1]
[1]UKM, [2]PPUKM, 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 Kim[1], Yoonkyung Park[1], Whanseo Lee[1], JeongHye Sunwoo[1], Jee Won Han[1], Jae Yong Kim[1], Hungwon Tchah1, Hun Lee*[1]
[1]Department 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 Chaudhary[1], Tien Tiep Nguyen[2], Nhu Nam Nguyen[1], Jee-Heon Jeong*[1]
[1]Department of Precision Medicine, School of Medicine, Sungkyunkwan University, [2]Department of Pharmaceutical Science, College of Pharmacy, Keimyung University, Republic of Korea

October 5-6
PS05 Organ-mimetic platforms (organoid, organ-on-a-chip, etc.)

PS05-001

Engineering hair follicle organoids through microenvironmental reprograming

Tatsuto Kageyama[1], Junji Fukuda*[2]
[1]Kanagawa Institute and Industrial Science and Technology, [2]Yokohama National University, Japan

PS05-002

Zika virus infection accelerates Alzheimer's disease phenotypes in brain organoids

Hee-Yeong Kim[1], Seung-Eun Lee[1], Kyung-Sun Kang*[1]
[1]Seoul 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 Hwang[1], Hyun Wook Kang[1], Nakwon Choi[1], Jongbaeg Kim[2], Hong Nam Kim*[1]
[1]KIST, [2]Yonsei 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 Kim[1], Seungyeon Cho[1], Dong Gyu Hwang[1], Jinah Jang*[1]
[1]POSTECH, Republic of Korea

PS05-006
Aging of the blood-brain barrier (BBB) via reactive oxygen species (ROS) stimulation
Eun U Seo[1], Hong Nam Kim*[1]
[1]KIST, Republic of Korea

PS05-007
Microrheological system for hepatic function enhancement of human liver organoids
Jae Hee Byeon[1], Gi Seok Jeong*[2]
[1]University of Ulsan, [2]Asan Medical Center, Republic of Korea

PS05-008
3D microfluidic meningeal lymphatic vascular system to study age-related pathological effects of cerebrospinal fluid
Jiyeon Ryu[1], Tae-eun Park*[1]
[1]UNIST, Republic of Korea

PS05-009
A microphysiological system reproducing obesity- associated adipose tissue inflammation
Heejeong Yoon[1], Tae-Eun Park*[1]
[1]UNIST, Republic of Korea

PS05-010
Analysis of metastatic organotropism in breast cancer cells using a microphysiological systems
Heejeong Yoon[1], Ju-Hae Choi[1], Joo H. Kang[1], Tae-Eun Park*[1]
[1]UNIST, Republic of Korea

PS05-011
Generation of 3D innervated skeletal muscle mode
Eunseon Jeong[1], Suah Choi[1], Junghoon Kim[1], Seung- Woo Cho*[1]
[1]Yonsei Univ., Republic of Korea

PS05-013
Cortical-blood vessel assembloids exhibit Alzheimer's disease pathologies by activating glia after SARS-CoV-2 infection
Nam Gyo Kim[1], Dasom Kong[1], Ki Hoon Park[2], Young Bong Kim[2], Kyung-Sun Kang*[1]
[1]Seoul National University, [2]Konkuk 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 acne
Min-ji Kim[1], Song-Yi Jung[1], Kyung-Sun Kang*[1]
[1]Seoul National University, Republic of Korea

PS05-015
Endometrium organoid as an in vitro model for female reproductive diseases
Eunju Park[1], Dongyun Kang[1], Su Min Kwak[1], Yoonhee Jin*[2]
[1]Yonsei University College of Medicine, [2]Department of Physiology, Yonsei University College of Medicine, Republic of Korea

PS05-016
Development of functional hepatic organoids with liver-specific microenvironments
Su Kyeom Kim[1], Sewon Park[1], Seung-Woo Cho*[1]
[1]Yonsei University, Republic of Korea

PS05-017
Human stomach microphysiological system for modelling *Helicobacter Pylori* pathogenesis
Hye-Jin Jeong[1], Joo H. Kang[1], Seong-Ho Kong[2], Tae-Eun Park*[1]
[1]Ulsan National Institute of Science and Technology, [2]Seoul 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 system
WonJin Kim[1], Hyeongjin Lee[1], JiUn Lee[1], SooJung Chae[1], JuYeon Kim[1], Pei Mohan[1], GeunHyung Kim*[1]
[1]Sungkyunkwan University, Republic of Korea

PS01-030
Gelatin incorporation in VEGF-loaded PVA-Tyramine hydrogels to enhance cellular interaction and vascular infiltration
Alessia Longoni*[1], Gretel Major[1], Pau Atienza-Roca[1], Lyn Wise[1], Gary Hooper[1], David Kieser[1], Tim Woodfield1, Jelena Rnjak-Kovacina3[2], Khoon Lim[1]
[1]University of Otago, [2]UNSW Sydney, New Zealand

PS01-031
Microfluidic chip development for vascularized bone marrow niche
Seoyeon Kim[1], Jung Hun Kim[1], Nathaniel Whang[3], Hwan Kim*[2]
[1]Seoul National University, Korea National University of Transportation, [2]Korea National University of Transportation, [3]Seoul National University, Republic of Korea

PS01-032
Polycaprolactone/gelatin/polydeoxyribonucleotides nanofiber for wound healing application
Tae-Hee Kim[1], Se-Chang Kim[1], Pathum Chandika[1], Jin-Bok Jang[1], Ji-Won Jeong[1], Won-Kyo Jung*[1]
[1]Pukyong National University, Republic of Korea

PS01-033
Triple cross-linked methacrylate kappa-carrageenan/poly (vinyl alcohol)/chitooligosaccharide wound dressing hydrogel for wound healing application
Nam-Gyun Kim[1], Pathum Chandika[1], Fazlurrahman Khan[1], Young-Mog Kim[1], Seong-Yeong Heo[3], Gun-Woo Oh[4], Min-Sung Kim[2], Won-Kyo Jung*[1]
[1]Pukyong national university, [2]Korea Conformity Laboratories, [3]Korea Institute of Ocean Science & Technology, [4]National Marine Biodiversity Institute of Korea, Republic of Korea

PS01-034
Topographical regulation for local bone regeneration in type 1 diabetes mellitus: In-vivo
MIN GUK KIM[1], HYEJI EOM[1], DO-YEON KIM[2], CHAN HO PARK*[1]
[1]Department of Dental Biomaterials, School of Dentistry, Kyungpook National University, [2]Department of Pharmacology, School of Dentistry, Kyungpook National University, Republic of Korea

PS01-035
The effect of nanohydroxyapatite incorporated with micro RNA 21 in regulating osteogenesis
Reva Subramaniam[2], Law Jia Xian[1], Ekram Alias[1], Ng Min Wei*[1]
[1]Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, [2]University Kebangsaan Malaysia, Malaysia

PS01-036
Anti-senescence ion-delivering nanocarrier for recovering therapeutic properties of long-term-cultured human adipose-derived stem cells
Yeong Hwan Kim[1], Suk Ho Bhang*[1]
[1]Sungkyunkwan University, Republic of Korea

PS01-037

Mesenchymal stem cell and hydrogel treatment of oral ulcer

Hyun Seok Ryu[2], Celine Abueva[1], Andrew Padalhin[1], So Young Park[1], Hayoung Lee[2], Phil-sang Chung[3], Seung Hoon Woo*[3]
[1]Dankook institute of medicine and optics, Dankook university, [2]Interdisciplinary Program for Medical Laser, College of Medicine, Dankook University, [3]Department of Otorhinolaryngolog-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 Cho[1], SuJeong Ahn[2], Yeo-Jun Yoon[1], Dohyun Kim[2], Won-Gun Koh[2], Jae-Yol Lim*[1]
[1]Department of Otorhinolaryngology, Gangnam Severance Hospital, Yonsei University College of Medicine, [2]Department 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 Tran[2], In-Su Park[1], Minh-Dung Truong[1], Hee-Woong Yun[1], Byung-Hyune Choi[4], Byoung-Hyun Min*[3]
[1]Cell Therapy Center, Ajou Medical Center, Suwon, [2]Department of Molecular Science and Technology, Ajou University, Suwon, [3]Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, [4]Department 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 Bello[1], Yunkyung Kim[2], Sunghyun Park[3], Manjunatha Muttigi[2], Jiseong Kim[1], Hansoo Park[2], Soo-hong Lee*[1]
[1]Dongguk University, [2]Chung Ang University, [3]CHA 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 Kwon[1], Cininta Savitri[1], Kwideok Park*[1]
[1]Korea 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 Chuang[1], Haile F Darge[1], Yu-Hsuan Lin[1], Hsieh-Chih Tsai*[1]
[1]National 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 Jebakumar[1], Mohandass Pachaiyappan[2], Niraikulam Ayyadurai[1], Numbi Ramudu Kamini[1], Janani Radhakrishnan*[1]
[1]CSIR - 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 Du[1], Clara Sanz[1], Stephen Elliman[3], Dimitrios Zeugolis[4], Timothy O'Brien*[2]
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PS01-045

Novel implantable, wireless electricity auto-generating patch accelerates the wound healing process by modulating mechanosensitive ion channels

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PS01-046

Therapeutic nanoglass paste as a drug-free platform for the regeneration of bacteria-infected hard tissues

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PS01-047

Cobalt doped silica microcarrier with action of promoting angiogenesis and bactericidal potential through dual-ion delivery

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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 Son[1], Laurensia Danis Anggradita[1], Hyungtae Kim[2], Sukyoon chang[2], Kwangok Choi[2], Seung Min Nam[3], Yongsung Hwang*[1]
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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 Kim[1], Sung Sik Hur[1], 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 Mandakhbayar[1], Ahmed El-Fiqi[3], Seung Bin Jo[1], Jonathan C Knowles[2], Jung-Hwan Lee[1], Hae-Won Kim*[1]
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PS01-051

Effects of enamel matrix derivative on the cellular viability and differentiation potential of cell spheroids composed of gingiva-derived stem cells

Somyeong Hwa[1], Hyun-Jin Lee[1], Youngkyung Ko[1], Jun-Beom Park*[1]
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PS01-052

Enhanced wound healing with decellularized amniotic membrane hydrogels by supercritical CO_2 process

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PS01-053

The effect of hFC-MSCs on the induces bone formation by notch signaling

Jaemin Lee[3], Hyun-Ju An[1], Jongseop Rim[2], Borim An[2], Junsung Kim[2], Bosung Jung[1], Soonchul Lee*[1]
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PS01-054

Thiolated mesoporous silica nanoparticles for the treatment of oxidative stress-associated osteoporosis

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PS01-055

Wound healing effects of extremely low-frequency electromagnetic fields through activation and differentiation of stem cells

Ju-Hye Choi[1], Myeong-Hyun Nam[1], Ji-Hoon Park[1], Won-Jun Kim[1], Hee-Jung Park[1], Quan Feng Liu[1], Young-Kwon Seo*[1]
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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 Choi[1], Su-Hwan Kim*[1]
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PS02-073

Natural-origin injectable hydrogel for acellular skin wound treatment

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PS02-074

Transplantation of the cultured human corneal endothelial cells with decellularized extracellular matrix in the corneal endothelial dysfunction rabbit model

Hun Lee[1], Yoonkyung Park[1], Jeong Hye Sunwoo[1], Yejin Song[2], Jin Kim[1], Sung Wook Choi3, Changmo Hwang[2], Jae Yong Kim[1], Hungwon Tchah[1], Hun Lee*[1]
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PS02-075

Bio-adhesive complex coacervate-mediated localized AAV delivery

Hyun-Woo Park[2], Slgirim Lee[1], Jae-Hyung Jang*[1]
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PS02-076

Thiol-ene clickable silk fibroin bio-ink for digital light processing bio-printing

Xuan Hao Tan*[1], James Goh Cho Hong[1]
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PS02-077

Biomaterials text mining: A comparative study of methods on the biocompatible polymer polydioxanone

Carla Veronica Fuenteslopez*[1], Austin McKitrick[2], Javier Corvi[3], Maria-Pau Ginebra[2], Osnat Hakimi[4]
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PS02-078
Anti-inflammatory, dry adhesive patches based on catechol-modified sulfated hyaluronic acid for multipurpose application
Wonmoon Song[1], Young Hwan Choi[2], Nathaniel Suk-Yeon Hwang*[1]
[1]Seoul National University, [2]Johns Hopkins School of Medicine, Republic of Korea

PS02-079
Strong adhesive hemostatic agent based on catechol-chitosan and hyaluronic acid
Jeong Haeln[1,2], Song Won-Moon[1], So Kyoung-Ha[1], Hwang Nathaniel Suk-Yeon*[1]
[1]Seoul National University, [2]Republic of Korea Army, Republic of Korea

PS02-080
Bioadhesive cryogel for non-compressible haemostasis during orthopaedic surgical procedure
Sivashanmugam Amirthalingam[2], Arun Kumar Rajendran[1], Nathaniel S Hwang*[1]
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PS02-081
Integrating endothelialized microchannels with mesenchymal stem cell spheroids in a 3D-printed construct for ischemic disease therapy
Aruzhan Naren[1], Jeonghyun Son[1], Hyun-Wook Kang*[1]
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PS02-082
Ceramic loaded tissue adhesive composite gel for rapid hemostasis in osteo-surgeries
Arun Kumar Rajendran[1], Sivashanmugam Amirthalingam[2], Nathaniel S Hwang*[1]
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PS02-083
Efficient activation of dendritic cells with CpG-coated functional nanoparticle
Jaesung Lim[1], Hee Seung Seo[1], Se-Na Kim[2], Jun-Hyeok Han[1], Wooram Park[1], Chun Gwon Park*[1]
[1]Sungkyunkwan University, [2]Seoul National University, Republic of Korea

PS02-084
Modulating sepsis-associated NETosis dysregulation using bioinspired DNase-Ⅰ-coated polymeric nanospheres
Yun Young Lee[1], Young Bin Choy[1], Chun Gwon Park*[2]
[1]Seoul National University College of Medicine, [2]Sungkyunkwan 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 Costa[1], Valeryia Drobyshava[1], Kopych Vadym1, Kwideok Park*[1]
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PS02-086
Nano-graphene oxide crosslinking improves in vivo durability of decellularized scaffold through MMP suppression and immunomodulation
Da-Hyun Kim[1], Min-Soo Kim[1], Kyung-Sun Kang*[1]
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PS02-087
Development of poly(lactide-co-caprolactone) film combined with mesenchymal stem cell-derived matrix for corneal endothelial cells transplantation
Eui Sun Song[1], Choul Yong Park[2], Kwideok Park*[1]
[1]University of Science and Technology, Korea Institute of Science and Technology, [2]Department of ophthalmology, Dongguk University, Republic of Korea

PS02-090
Enzyme-mediated redox system for tissue engineering
Su-Hwan Kim*[1]
[1]Dong-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 Lee[1], Nahyun Kim[1], Ginam Han[1], Sinwoo Park[1], Yuhyeon Na[1], Hyun-Do Jung*[1]
[1]The 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 Lee[1], Nahyun Kim[1], Hyun-Do Jung*[1]
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PS02-093
Investigation of shear flow effect on vascular endothelium under a dynamic flow system
Vadym Kopych[1], Kwideok Park*[1]
[1]KIST, Republic of Korea

PS02-095
Composite scaffolds of gelatin and Fe3O4 nanoparticles for magnetic hyperthermia-based breast cancer treatment and adipose tissue regeneration
Rui Sun[1], Naoki Kawazoe[2], Guoping Chen*[1]
[1]a.Research Center for Functional Materials, National Institute for Materials Science; b.School of Pure and Applied Sciences, University of Tsukuba, [2]Research Center for Functional Materials, National Institute for Materials Science, Japan

PS02-096
Development of PLA/sirolimus coated biodegradable PCL/SiO_2 stents fabricated by 3D printing
Ginam Han[1], Sinwoo Park[1], Hyun Lee[1], Seokbeom Kim[2], Jun-Kyu Park[2], Hyun-Do Jung*[1]
[1]Catholic University of Korea, [2]CG Bio Co., Ltd, Republic of Korea

PS02-097
Development of drug-eluting bullets with controlled drug release and radiopacity for anti-cancer treatment
Ginam Han[1], Hyun Lee[1], Wooram Park[2], Hyun-Do Jung*[1]
[1]Catholic University of Korea, [2]Sungkyunkwan University, Republic of Korea

PS02-098
Magnetic nanoparticles-based specific enrichment system for biomarker concentration of transplant rejection in the blood
Suhyun Kim[1], Jinmyoung Joo*[1]
[1]Department 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 Zheng[1], Yongtao Wang[1], Naoki Kawazoe[2], Guoping Chen*[1]
[1]Tissue Regeneration Materials Group, Research Center for Functional Materials, National Institute for Materials Science, Department of Materials Science and Engineering, Graduate School of Pure and Applied Sciences, University of Tsukuba, [2]Tissue Regeneration Materials Group, Research Center for Functional Materials, National Institute for Materials Science, Japan

PS02-100

Fabrication and evaluation of a powder-type hemostatic agent with effective adhesion property

Ye Lim Lee[1], Jeong Min Kim[1], Yunjeh Ko[1], Oh Hyeong Kwon*[1]
[1]Kumoh 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 Shin[1], Yu Jin Kim[1], Do Kyung Kim[1], Yunjeh Ko[1], Oh Hyeong Kwon*[1]
[1]Kumoh National Institute of Technology, Republic of Korea

PS02-102

Development of a powder-type adhesive hemostatic agent containing blood coagulation agent

Dong Hun Kang[1], Yunjeh Ko[1], Hyolim Lee[1], Donghun Sim[1], Oh Hyeong Kwon*[1]
[1]Kumoh 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 Jo[1], Akhmad Irhas Robby[3], Sung Young Park*[2]
[1]Department of IT and Energy Convergence (BK21 FOUR), Korea National University of Transportation, [2]Department of Chemical and Biological Engineering, Korea National University of Transportation, [3]Department of Green Bio Engineering, Korea National University of Transportation, Republic of Korea

PS02-104

GSH responsive carbon dots incorporated flexible and stretchable skin sensor with wireless monitoring of pressure strain response in cancer condition

Kaustuv Roy[1], Akhmad Irhas Robby[3], Sung Young Park*[2]
[1]Department of IT and Energy Convergence (BK21 PLUS), Korea National University of Transportation, [2]Department of Chemical and Biological Engineering, Korea National University of Transportation, [3]Department 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 Subba[2], Seul Gi Kim[1], Sung Young Park*[1]
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PS02-106

Tumor microenvironment-dependent maturation of hepatocarcinoma cells spheroids formed within microfluidics-generated 3D microgels for chemotherapeutics testing

Seung Yeop Baek[1], Suntae Kim[1], Chaenyung Cha*[1]
[1]Ulsan National Institute of Science and Technology, Republic of Korea

PS02-109

Preparation of multiscale biomedical scaffold by assembling self-healable hydrogel modules

JaeWook Park[1], JeongWoo Ham[1], HyunJi Kim[1], WonGun Koh*[1]
[1]Yonsei University, Republic of Korea

PS02-110

Fabrication of biomimetic scaffold for glycosaminoglycan (GAG)-rich tissue

Xingxing Yang[1], Barbara Pui Chan*[1]
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PS02-111

Gelatin scaffold with lipid-PLGA microparticles for sustained curcumin release and corneal tissue engineering

Chun Kai Chang[1], Chieh Cheng Huang*[1]
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PS02-112

Development of cell-laden α-TCP/GeLMA 3D construct for hard tissue regeneration

Jueun Kim[1], Honghyun Park[2], Hui-suk Yun*[1]
[1]University of Science and Technology (UST), [2]Korea 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 immunochemotherapy

Zhen Xiang Hong[1], Yu Shuan Chen[2], Hsieh Chih Tsai*[1]
[1]National Taiwan University of Science and Technology, [2]Buddhist Tzu Chi Medical Foundation, Chinese Taipei

PS02-114

Synergistic composite for wound healing by delivery of fibroblast growth factor

Minju Kim[1], Jinmyoung Joo*[1]
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PS02-115

Zinc ion-releasing tissue adhesives for wound management

Sung Eun Kim[1], Kyung Min Park*[1]
[1]Incheon National University, Republic of Korea

PS02-116

Zinc ion-releasing in situ crosslinkable hydrogels for endogenous tissue regeneration

Yeonjeong Kim[1], Kyung Min Park*[1]
[1]Incheon National University, Republic of Korea

PS02-117

Assessing jellyfish collagen hydrogel for supporting human osteoblasts

Chaozong Liu*[1], Maryam Tamaddon[1], Andrew Mearns Spragg[2], Pascale Guillot1, Swastina Nath Varma[1]
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PS02-118

Gelatin-based dual delivery matrices releasing calcium and oxygen to facilitate vascularized bone tissue regeneration

Jeong Min Kim[1], Min Ji Han[1], Kyung Min Park*[1]
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PS02-119

Silk-collagen hydrogel improves therapeutic effects of mesenchymal stem cells on neovascularization in hindlimb ischemia via FAK/Src axis

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PS02-120

Chondrocyte-mimicking microspheres for osteochondral defect repair

ZECHU ZHOU[1], Na-Hyun Lee[1], Ji-Young Yoon[4], Nandin Mandakhbayar[2], Hye Sung Kim[2], Hae-Won Kim*[3]

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PS02-121

Oxygen-supplying syringe to create hyperoxia-inducible hydrogels for in situ tissue regeneration

Jeon Il Kang[1], Kyung Min Park*[1]

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PS02-122

Long-term maintenance of viable adipocytes and enhanced blood vessel infiltration in vivo using spheroid-based bioprinted construct

Hanan Mohamed[1], Jeong Hyun Son[1], Wonwoo Jeong[1], Hyun-Wook Kang*[1]

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PS02-123

Controlled drug release by a tough and adhesive bilayer hydrogel with external stimulation

Jeesoo Park[1], Esensil Man Hia[1], Vignesh K. Kaliannagounder[1], Cheol Sang Kim*[1]

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PS02-124

Bio-reprinting technique as an advanced method for micro-scaled tissue structure fabrication

Jae-Hun Kim[1], Chanhan Kang[1], Jin-Hyung Shim1, Songwan Jin[1], Won-Soo Yun*[1]

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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 Liu[1], Her-Hsiung Huang*[1]

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PS02-126

pH-sensitive photonic crystal patch for wound healing monitoring

YongHoe Koo[1], Jinmyoung Joo*[1]

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PS02-127

Bio-ink and 3D printing-based to mimic of three-dimensional skin complex with internal blood vessels

Dongjin Lee[1], Ji Min Seok[1], Dahong Kim[2], Seunghun Son[1], Seon Ju Yeo[1], Jun-Hee Lee[1], Su-A Park*[1]

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PS02-128

3D conduit model bio printing for mimicking the human intestine

Seunghun son[1], Su-A Park[1], Dongjin Lee[1], Ji Min Seok[1], Dahong Kim[1], Seon Ju Yeo[1], Jun-Hee Lee*[1]

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PS02-129

Stent-based electrode for radiofrequency ablation in the rat esophagus: A proof-of concept study

Dong-Sung Won[1], Ji Won Kim[1], Jung-Hoon Park*[1]

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PS02-130

Intragastric satiety-inducing device combined with photodynamic therapy to treat obesity

Ji Won Kim[1], Hoon-Yong Jung[1], Dong-Sung Won[1], Jung-Hoon Park*[1]

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PS02-131

Development of 3D printed thermo-responsive skin-derived decellularized extracellular matrix hydrogel adhesive patch with controllable shrinkage behavior

Sungkeon Cho[1], Taehun Chung[1], Hyoryung Nam[1], Won-Woo Cho[1], Youn Soo Kim[1], Jinah Jang*[1]

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PS02-132

Development of 3D printing-based tendon-derived stem cell-laden 3D microtissues for tendon tissue engineering

Jothilin Subitsha Alex Jeberson[1], George Augustine[1], Yunhye Kim[1], Jiwon Son[1], Ami Lee[1], Joon Ho Lee[2], Yongsung Hwang*[1]

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PS02-133

Development of anti-fouling and anti-thrombogenic surface using visible light cross-linked zwitterionic hydrogel coatings for implantable medical devices

Soonjong Roh[1], Kangwon Lee[2], Jin Yoo*[1]

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PS02-134

Visible light activated collagen based hydrogel for rotator cuff regeneration

Yerim Song[1], Jonghoon Choi[2], Youngmee Jung*[1]

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PS02-135

Polycaprolactone scaffolds with improved mechanical properties and structural stability fabricated by a screw extrusion-type 3D printer

Jae Jun Kang[1], Su Hee Kim[1], Misun Cha*[1]

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PS02-136

Development of a superhydrophilic surface for antifouling and antithrombotic properties using layer-by-layer assembly of laponite and heparin

Seyoun Jang[1], Il Keun Kwon[2], Jin Yoo*[1]
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PS02-137

Fabrication of 3D bioprinted tumor cell-laden scaffold using photo-crosslinkable bioink

Kyoung Choi[1], Cho Young Park[1], Jun Shik Choi[1], Sang Jun Park[1], Sang Hyoun Choi[3], Seok Chung[2], Chun-Ho Kim*[1]
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PS02-138

In-vivo biological safety and longevity study of thermal-sensitive chitosan dermal filler

Soo Hee Lee[1], Su Hee Kim[1], Mi Sun Cha*[1]
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PS02-139

Development of a 3D culture hydrogel and artificial skin model based on alginate-decellularized extracellular matrix

Seon Mi Park[1], Su Hee Kim[1], Misun Cha*[1]
[1]MediFab 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 Lee[2], Celine Abueva[1], Hyun Seok Ryu[2], So Young Park[1], Andrew Padalhin[1], Jun Won Min[4], Phil-Sang Chung[3], Seung Hoon Woo*[3]
[1]Beckman Laser Institute Korea, Dankook University College of Medicine, [2]Interdisciplinary Program for Medical Laser, Dankook University, [3]Department of Otorhinolaryngology-Head and Neck Surgery, Dankook University College of Medicine, [4]Department 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 Min[1], Kim Tae Hee[1], Kim Dong-Hwee[2], Jung Youngmee*[1]
[1]Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and (Technology KIST), [2]NBIT, 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 Choe[3], Ulkyu Han1, Seongryeol Ye[2], Sujee Kang1, Young Sang Cho[1], Youngmee Jung*[2]
[1]Department of Otorhinolaryngology Head and Neck Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, [2]Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Seoul, [3]Korea Institute of Science and Technology, Republic of Korea

PS02-143

Layer-by-layer coatings for the enhanced biological performance of orthopaedic implants

Muhammad Faruqi*[1], Anjaneyulu Udduttulla[1], Piergiorgio Gentile[1], Ana Marina Ferreira-Duarte[1]
[1]NewcastleUniversity, 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 Bang[1], Hye Jin Kim[1], Sujin Lee[1], Hye-Ryoung Kim[1], Sujeong Lee[1], Keun-Hong Park*[1]
[1]CHA University, Republic of Korea

PS03-015

Hydroxytyrosol: *In vitro* study on its feasibility and efficacy in attenuating intimal hyperplasia progression

Ubashini Vijakumaran[2], Muhammad Dain Yazid[2], Mohd Ramzisham Abdul Rahman[1], Hairulfaizi Haron[1], Nur Ayub Md Ali[1], Muhammad Ishamuddin Ismail[1], Nadiah Sulaiman*[2]
[1]Department of Surgery, Hospital Canselor Tuanku Mukhriz, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia, [2]Center 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 Lau[1], Jae Hyung Jang*[1]
[1]Yonsei University, Republic of Korea

PS03-017

Enzyme-mediated oxygen releasing polyphenol particles for ischemia treatment

Jin-Woo Hong[1], Su-Hwan Kim*[1]
[1]Dong-A University, Republic of Korea

PS03-018

Disturbed flow-targeting nanovesicles for early theragnosis of atherosclerosis

Seong-Jun Kang[1], Jung Bok Lee[3], Hak-Joon Sung[2], Jeong-Kee Yoon*[1]
[1]Chung-Ang University, [2]Yonsei University, [3]Sookmyung Women's University, Republic of Korea

PS03-019

Plant-inspired pluronic-gallol micelle: Low critical micelle concentration, high protein affinity, and thermal stability

Jungwoo Kim[1], Mikyung Shin*[1]
[1]Department of Intelligent Precision Healthcare Convergence, Sungkyunkwan University, Republic of Korea

PS03-020

Anti-inflammatory efficacy of metformin-encapsulated PLGA

Dae Kyu Kim[1], Min jun Shin[3], Dongwoo Khang*[2]
[1]Department of Biochemistry and Biomimetics, Bowdoin College, [2]Department of Physiology, College of Medicine, Gachon University, [3]Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, USA

PS03-021

Acoustic anticancer therapy using nanoparticle

Yong-Gyu Jeong[1], Dongwoo Khang*[2]
[1]Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, [2]Department of Physiology, College of Medicine, Gachon University, Republic of Korea

PS03-022

Nano-corona anticancer strategy

Su Hyun Lim[1], Jun Young Park[1], Dongwoo Khang*[2]

[1]Gachon Advanced Institute For Health Sciences and Technology, GAIHST, Gachon University, [2]Department 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 mode

Jinwoo Kim*[1], Sihoon Lee[2], Sun-Jong Kim[1]
[1]Ewha Womans University, [2]Gachon University College of Medicine, Republic of Korea

PS03-025

Long-term anti-inflammatory effects of injectable celecoxib nanoparticle hydrogels for achilles tendon regeneration

Jun Kim[1], Young-Min Kim[1], Sung Eun Kim[2], Soo-Chang Song*[1]
[1]Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Seoul, 02792, Republic of Korea; Division of Bio-Medical Science and Technology, KIST School, Korea University of Science and Technology, Seoul, 02792, Republic of Korea, [2]Department 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 Abdullah[2], Nur Qisya Afifah Veronica Sainik[5], Muhammad Rusdi Ahmad Rusmili[4], Wayne C. Hodgson[3], Mohd Farooq Shaikh[1], 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 Soukarieh[1], Laura Barrientos-Moreno[1], Shaun Robertson[1], Emily Dixon[2], Abshar Hassan[3], Manuel Romero[1], Richard Johnson[2], Becci Hutchinson[4], Laura Mason[2], Miguel Cámara[1], Felicity Rose*[3]
[1]National Biofilms Innovation Centre, Biodiscovery Institute, School of Life Sciences, University of Nottingham, Nottingham NG7 2RD, [2]Upperton Pharma Solutions, Albert Einstein Centre, Science Park, Nottingham NG7 2TN, [3]Regenerative Medicine and Cellular Therapy, School of Pharmacy, University of Nottingham, Nottingham NG7 2RD, [4]Ceramisys 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 Park[1], TIEP NGUYEN[2], Jisu Son[1], Jee-Heon Jeong*[1]
[1]Sungkyunkwan University, [2]Keimyung University, Republic of Korea

PS04-015

Donor-dependent skeletal muscle differentiation mechanism of tonsil-derived mesenchymal stem cells

Min Ji Lee[1], Ha Yeong Kim[1], An Nguyen-Thuy Tran[1], Saeyoung Park[2], Sung-Chul Jung[2,3], Han Su Kim*[1]
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PS04-016

Generation of functional airway epithelial cells from human tonsil-derived mesenchymal stem cells by mimicking stepwise differentiation

Ha Yeong Kim[1], Han Su Kim[1], Soo Yeon Jung*[1]
[1]Ewha Womans University, Republic of Korea

PS04-017

Optimization of in vitro culture conditions to maintain hepatic stellate cell in quiescence

Ya Gong[1], Mathieu Daony[1], Takemoto Kido[2], Masaki Nishikawa[1], Atsushi Miyajima[2], Yasuyuki Sakai*[1]
[1]University of Tokyo, Department of Bioengineering, [2]University of Tokyo, Institute for Quantitative Biosciences, Japan

PS04-018

Phototoxicityfree blue light for enhancing therapeutic angiogenic efficacy of stem cells

Eun Cheol Lee[1], Sung Won Kim[1], Yu Jin Kim[1], Gwang Bum Im[1], Yeoung Hwan Kim[1], Gun Jae Jeong[1], Sung Min Cho[1], Hae Shin Lee[1], Suk Ho Bhang*[1]
[1]Sungkyunkwan University, Republic of Korea

PS04-019

Salivary gland organoids as therapeutic models for radiation-induced xerostomia

Seong Gyeong Jeon[1], Jaeseon Lee[2], Woo Hee Choi[1], Jaehwi Seo[2], Dong Hyuck Bae[1], Young Chang Lim[3], Jongman Yoo*[1]
[1]Department of Microbiology, CHA University School of Medicine, Seongnam, [2]ORGANOIDSCIENCES Co., Ltd., 406, 560, Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, [3]Department 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 Park[1], Gwang-Bum Im[1], Suk Ho Bhang*[1]
[1]School 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 Lee[1], Gwang-Bum Im[1], Suk Ho Bhang*[1]
[1]School 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 Ryu[2], Donghyeok Bae[1], Jongman Yoo*[1]
[1]Department of Microbiology, CHA University School of Medicine, Seongnam 13488, [2]Department 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 Anggradita[1], Sung Sik Hur[1], Myung Jin Ban[2], Yongsung Hwang*[1]
[1]Soonchunhyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, [2]Department 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 Lee[3], Ana Rita M. P. Santos[1], Yong Guk Kang[1], Yun Jin Chae[2], Myeongjin Myeongjin Song[1], Sangdun Choi[4], Jongseong Kim[2], Yongdoo Park*[1]
[1]Department of Biomedical Sciences, College of Medicine, Korea University, Seoul 02841, Korea, [2]R&D center, Scholar Foxtrot, Seoul 02796, Korea, [3]Korea 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 Yeo[1], So-Young Lee[1], Hyun-Ju An[1], Sujin Choi[1], Kyurim Lee[1], Soonchul Lee*[1]
[1]Cha 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 Kim[1], Yerin Kim[2], Soyeon Yun[2], Bu-Kyu Lee*[1,2,3]
[1]Biomedical Engineering Research Center, Asan Institute for Life Sciences, [2]Asan Medical Institute of Convergence Science and Technology, [3]Department 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 Kim[1], Juhyun Park*[1]
[1]Department of Biomedical Science, Kangwon National University, Chuncheon, Gangwon-do, 24341, Republic of Korea

PS05-019

Engineered heterochronic parabiosis in 3D microphysiological system

Yunki Lee[1], Jeongmoon Choi[1], Gunjae Jeong[1], Young Jang*[1]
[1]Emory University, USA

PS05-020

3D tumor angiogenesis models for effective anti-cancer treatment

Kim Hyelim[1], Kim Hongnam*[1]
[1]KIST, Republic of Korea

PS05-021

3D bioprinting-based tissue assembly to generate multi-axially contracting engineered heart tissue

Dong Gyu Hwang[1], Uijung Yong[1], Hwanyong Choi[1], Jinah Jang*[1]
[1]POSTECH, 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 SHIN[1], Susan K. NILSSON[2], Rocky S. TUAN[1], Anna Maria BLOCKI[1]
[1]Institute for Tissue Engineering and Regenerative Medicine, The Chinese University of Hong Kong, [2]Biomedical 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 Kim[1], Nathaniel Suk-Yeon Hwang[1], Hwan Kim*[2]
[1]School of Chemical and Biological Engineering, Seoul national University, Seoul, [2]Department 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 Oh[1], Jae-Ho Cheong[2], Pilnam Kim*[1]
[1]Department of Bio and Brain Engineering, KAIST, [2]Department 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 Goh[1], Heymin Jung[1], Yuna Lee[1], Song Cheol Kim[1], In Kyong Shim*[1]
[1]Asan Medical Center, Republic of Korea

PS05-027

Modeling pancreatic cancer with patient-derived organoids integrating cancer-associated fibroblasts

Go Yoon-Ha[1], Woo Hee Choi[1], Won Jung Bae[2], Sook-In Jung[1], Chang-Hoon Cho6, Seung Ah Lee[5], Joon Seong Park[7], Ji Mi Ahn[2], Sung Won Kim[3], Kyung Jin Lee[4], Dakeun Lee[2], Jongman Yoo*[1]
[1]Department of Microbiology, CHA University School of Medicine, Seongnam 13488, Korea, [2]Department of Pathology, Ajou University School of Medicine, Suwon 16499, Korea, [3]Department of Otolaryngologyu2014Head and Neck Surgery, Seoul St. Maryu2019s Hospital, College of Medicine, The Catholic University of Korea, Seoul 06591, Korea, [4]R&D Institute, ORGANOIDSCIENCES Ltd., Seongnam 13488, Korea, [5]Department of Surgery, CHA Bundang Medical Center, CHA University, Seongnam 13496, Korea, [6]R&D Institute, ORGANOIDSCIENCES LTD, Seongnam 13488, Korea, [7]Pancreatobiliary 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 Lee[1], MinHeui Yoo[2], Byoung-seok Lee[2], Jaeyeaon Cho*[1]
[1]ORG Corp., [2]Korea Institute of Toxicology, Republic of Korea

PS05-029

Enhancing maturation of human vascularized cardiac organoids using a magnetic torque stimulation (MTS) system

TaeHoon Sin[1], Jimin Noh[1], Yongdoo Park*[1]
[1]Korea 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 Inamura[1], Mathieu Danoy[1], Sylvia Leo[2], Mutsumi Inamatsu[3], Sohei Funaoka[4], Daichi Aihara[4], Takeshi Sakura[4], Takumi Kawanishi[5], Hiroshi Arakawa[5], Yukio Kato[5], Masaki Nishikawa[1], Nobuaki Shiraki[2], Shoen Kume[2], Hiroshi Kimura[6], Yasuyuki Sakai[1]

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PS05-031

3D multicellular cancer microenvironment platform supporting survival of acute myeloid leukemia (AML) in cultures

Hoi Lam Cheung[1], Yu Hin Wong[1], Yuk Yin Li[3], Koon Chuen Chan[2], Anskar Yu Hung Leung[2], Barbara Pui Chan*[1]

[1]Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong; Advanced Biomedical Instrumentation Centre, Hong Kong Science Park, [2]L8-16, Lab block, Department of Medicine, LKS Faculty of Medicine, The University of Hong Kong, [3]Tissue Engineering Laboratory, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong

PS05-032

Generation of functional porcine and human thyroid organoid

Lee Jaeho[1], Choi Woo Hee[1], Park Jun-Yeol[1], Yoo Jongman*[1]

[1]Department 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 Kim[1], Laurensia D. Anggradita[1], Myung Jin Ban[2], Yongsung Hwang*[1]

[1]Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, [2]Department 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 Wakabayashi[1], Yusuke Tobe[1], Chihiro Toma[2], Goro Kuramoto[2], Jun Homma[2], Kiyotaka Iwasaki[1], Tatsuya Shimizu[2], Katsuhisa Sakaguchi*[1]

[1]Waseda University, [2]Tokyo Women's Medical University, Japan

Optional Tour Program

YEHA IMP
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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 Jejusanma 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 Jejudo'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.

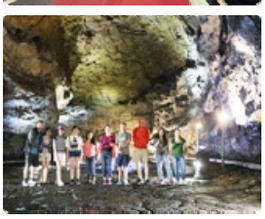
A-6. Seongsan Ilchulbong Peak [UNESCO World Heritage]

(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 Jejudo 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

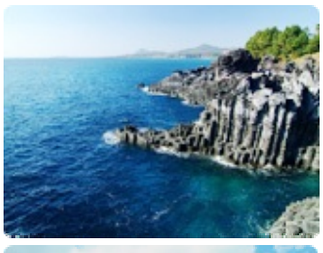
Located at the foot of Mt. Halla on Jeju Island, Seongeup Folk Village is a small town that holds a vast amount of culture.
Cultural properties in the folk village have been handed down from generation to generation and include treasures such as residential houses, Confucian shrines and schools, ancient 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 Jejudo 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.

Authors Index

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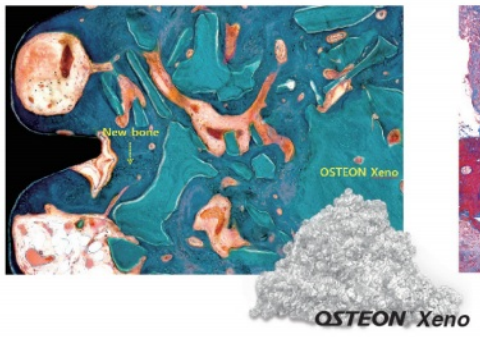
Micro-CT (Skyscan 1173)
Bone graft implantation experiment on Rat fibula

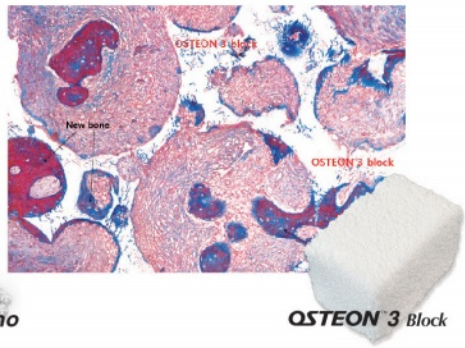
조직병리분석

- **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
- **Picrosirius red**
  콜라겐 Ⅰ & Ⅲ Type 확인

Resin
OSTEON Xeno in dog mandible *(16w)*

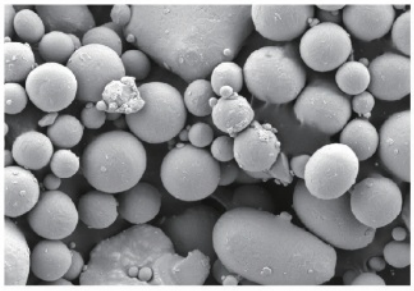


Paraffin
OSTEON 3 Block *(24w)*

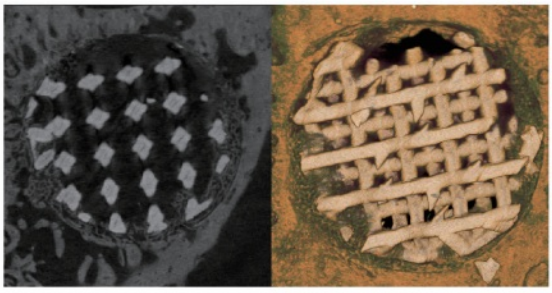


Equipment

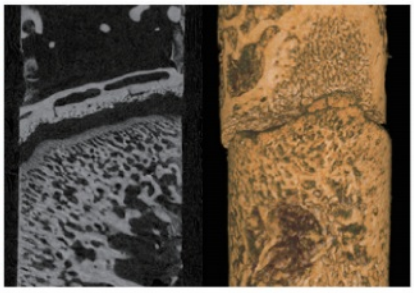
FE-SEM (Sigma 500, Zeiss)
Ti-powder



Micro-CT (Skyscan 1173)
PLA Scaffold



Rabbit femur



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- GMP grade
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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
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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

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Family

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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.

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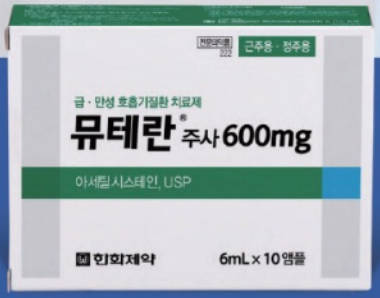
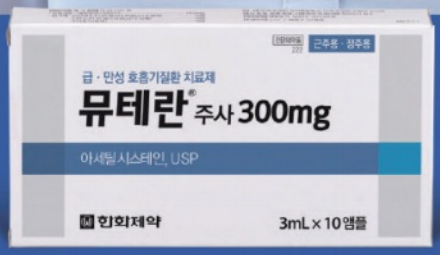
Acetylcysteine 300mg / 600mg / 1,000mg

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 치료 [3)]
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, 천식모양기관기지염, 인 · 후두염, 부비동염, 낭성섬유증, 수술후 폐합병증 2) 소아 : 급 · 만성 기관지염, 낭성섬유증 2. 아세트아미노펜 중독의 해독	**성 상**	무색 내지 엷은 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, 투여시간은 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℃)

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

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강원도 춘천시 남면 약암길 109

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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

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칼로덤 제품요약정보[1]

전문의약품

【제품명】 칼로덤(사람유래피부각질세포) 【원료약품 및 그 분량】 이 약 1개 중 • 칼로덤 56㎠ 유효성분: 사람유래피부각질세포 $2x10^7$개, 칼로덤 25㎠ 유효성분: 사람유래피부각질세포 $9x10^6$개, 칼로덤 9㎠ 유효성분: 사람유래피부각질세포 $3x10^6$개 【효능·효과】 1. 심부이도화상의 재상피화 촉진 2. 혈액공급이 원활하고 감염증 소견이 없는 당뇨성 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 【제조자】 테고사이언스㈜ 서울특별시 강서구 마곡중앙 8로 93 【판매자】 테고사이언스㈜ 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/

KLD-HA01-202105-01

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[원료약품 및 그 분량] 로바젯정10/5밀리그램 1정(319.3mg) 중 로수바스타틴칼슘 5.2mg(로수바스타틴으로서 5.0mg), 에제티미브 10.0mg, 로바젯정10/10밀리그램 1정(319.3mg) 중 로수바스타틴칼슘 10.4mg(로수바스타틴으로서 10.0mg), 에제티미브 10.0mg, 로바젯정10/20밀리그램 1정(432.6mg)중 로수바스타틴칼슘 20.8mg(로수바스타틴으로서 20.0mg), 에제티미브 10.0mg **[효능·효과]** 원발성 고콜레스테롤혈증 원발성 고콜레스테롤혈증(이형접합 가족형 및 비가족형) 또는 혼합형 이상지질혈증 환자의 상승된 총 콜레스테롤(total-C), LDL-콜레스테롤(LDL-C), 아포 B 단백(Apo B), 트리글리세라이드(TG) 및 non-HDL-콜레스테롤을 감소시키고, HDL-콜레스테롤(HDL-C)을 증가시키기 위한 식이요법의 보조제로서 이 약을 투여한다. 고콜레스테롤혈증에 기인한 동맥경화성 협관 질환의 위험성이 증가한 환자에게 지질조절약물을 투여할 때에는 많은 위험 인자를 고려해야 한다. 지질조절약물은 적절한 식이요법(포화지방 및 콜레스테롤 제한을 포함)과 함께 사용하고, 식이요법 및 다른 비약물학적 조치에 대한 반응이 불충분한 경우에 사용해야 한다. 이 약 투여에 앞서 이상지질 혈증의 다른 이차적 원인(예를 들면, 당뇨, 갑상선기능저하증, 폐쇄성 간질환, 만성신부전, LDL-콜레스테롤을 증가시키는 약물 및 HDL-콜레스테롤을 감소시키는 약물(progestin, anabolic sterod, 및 corticosteroid)을 확인하여야 하며, 필요한 경우 이차적 원인을 치료해야 한다. 지질 검사시에는 총콜레스테롤, LDL-콜레스테롤, HDL-콜레스테롤 및 트리글리세라이드를 포함해야 한다. 트리글리세라이드 수치가 400mg/dL 이상(4.5mmol/L 이상)인 경우에는 초원심분리로 LDL-콜레스테롤 농도를 측정해야 한다. 급성 관상동맥 사고로 입원할 경우에는 입원 시 혹은 입원 후 24시간 이내에 지질을 측정해야 한다. 환자의 퇴원 전 혹은 퇴원 시에 LDL 저하치로를 시작하는데 있어 이 측정치가 참고가 될 수 있다. **[용법·용량]** 이 약은 식사와 관계없이 1일 1회 투여한다. 이 약을 투여하기 전 또는 투여 중인 환자는 반드시 표준 콜레스테롤 저하식을 지속적으로 해야 한다. 이 약의 투여량은 환자의 LDL-콜레스테롤의 기저치, 권장되는 치료목표치 및 환자의 반응에 따라 조절되어야 한다. 원발성 고콜레스테롤혈증 이 약의 용량범위는 1일 10/5mg~10/20mg이다. 초회용량으로 1일 10/5mg이 권장된다. LDL-콜레스테롤 감소가 더 많이 요구되는 환자의 경우 용량을 조절하여 투여할 수 있다. 이 약의 투여를 시작한 후 또는 용량을 적정한 후에는 4주 이상의 간격을 두고 혈중 지질 수치를 확인한 후 그에 따라 용량을 조절하며, 1일 최대 10/20mg까지 증량할 수 있다. 에제티미브와 로수바스타틴을 병용으로 복용하고 있는 환자인 경우, 복용의 편리함을 위하여 이 약개개의 주성분 함량이 동일한 복합제으로 전환할 수 있다. *사용상의 주의사항 및 기타 자세한 사항은 제품설명서를 확인하십시오.

[제조자] 신풍제약 주식회사 경기도 안산시 단원구 원시로 7

[제조의뢰자]

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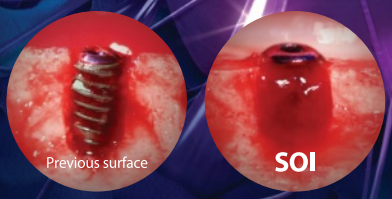

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