

**MFMS
2010**

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**BIN Fusion International Symposium on WCU
The 3rd International Conference on Multi-Functional
Materials and Structures: MFMS2010**



Grand Auditorium, Provisional Government Building at
Chonbuk, Jeonju, Korea September 14th, 2010

**BIN Fusion SYMPOSIUM ON MFMS2010
= Bioinspired Materials for the 21st Century =
Sept 14th, 2010, Grand Auditorium, Provisional Government Building at Chonbuk, Jeonju, Korea**

**Organized by Profs. Robert Nerem & Hai Bang Lee,
Department of BIN Fusion Technology, WCU Program, Chonbuk National University,
Sponsored by Korean Ministry of Education, Science and Technology & Chonbuk National
University**

Registration and Opening Ceremony

08:40-09:00	Registration	
09:00-09:05	Welcome Address	Prof. Joong Hee Lee Meeting Chair of MFMS2010
09:05-09:10	Opening Remark	Prof. Robert Nerem

**Student Oral Session I:
*Chairs: Dongwon Lee & Inkyu Park***

09:10-10:10	Students Oral Presentation (5)	
10:10-10:30	Coffee Break	

**Session I:
*Chairs: Robert Nerem & Hai Bang Lee***

10:30-11:10	Invited Lecture 1: Jons Hilborn PhD (Upssala Univ., Sweden) Cell Free Engineering of Bone, Cartilage and Tendon Tissues	
11:10-11:40	Invited Lecture 2: Mime Egami PhD (Tokyo Women's Medical College, Japan) Global Collaboration of CSTEC Medical Innovation	
11:40-12:05	Invited Lecture 3: Byung Hyun Min MD PhD (Ajou Univ., Korea) Extracellular Matrix-based Biomaterial and Its Application	
12:05-13:30	Lunch & Poster Session	

Session II:		
<i>Chairs: Chun Ho Kim & So Ra Park</i>		
13:30-14:10	Invited Lecture 4: Robert Nerem PhD (Georgia Tech., USA) Regenerative Medicine : Cells, Biomaterials, and Unlocking a Bio-Inspired Future	
14:10-14:35	Invited Lecture 5: Dong-Wook Kim PhD (Yonsei Univ., Korea) Efficient Induction of Neurons from Human ES and iPS Cells	
14:35-14:55	Coffee Break	
Session III:		
<i>Chairs: Soo Hong Lee & Oh Hyoung Kwon</i>		
14:55-15:35	Invited Lecture 6: Andres Garcia PhD (Georgia Tech., USA) BioArtificial Materials for Harnessing Host Repair	
15:35-16:00	Invited Lecture 7: Young Sook Son PhD (Kyung Hee Univ. Korea) Novel Function of Substace-P as an Injury-inducible Messenger to Mobilize Reparative Stem Cells from Bone Marrow	
16:00-16:25	Invited Lecture 8: Soo Hyun Kim PhD (KIST, Korea) Dual Growth Factor Delivery with Self-assembling Peptide Nanofiber Hydrogel in Myocardial Infarction	
16:25-16:40	Coffee Break	
Session IV:		
<i>Chairs: Ilkeun Kwon & Hueng Jae Chun</i>		
16:40-17:20	Invited Lecture 9: Yasuhiko Tabata MD PhD (Kyoto Univ., Japan) Multifunctional Biomaterials Indispensable for Regenerative Medicine and Stem Cell Biology	
17:20-17:45	Invited Lecture 10: Taek Rim Yoon MD PhD (Chonnam Univ., Korea) Osteoblastic Differentiation of Mesenchymal Stem Cells for Bone Tissue Engineering	
17:45-18:10	Invited Lecture 11: Hai Bang Lee PhD (Ajou Univ./KRICT, Korea) Cell Behavior on Polymer Surfaces	
18:10	Closing Remark &	Prof. Hai Bang Lee
18:30	Reception	



연구 논문 발표자 및 좌장에 대한 안내문

본 심포지움의 연구논문 발표회의 원활한 진행을 위하여 다음과 같이 시간을 정확하게 지켜주시기 바랍니다.

구 두 발 표

- ◎ 일반 연제 발표시간은 10분이며 한 파트를 마치고 10분간 질의 응답시간을 가집니다.
- ◎ 특별 강연 발표시간은 20~35분, 질의 응답시간은 5분입니다.
- ◎ 제목 및 발표자 변경 시 미리 좌장이나 관계자에게 통보해 주시기 바랍니다.

좌 장

- ◎ 발표자의 성명은 “○ ○ ○ 님” 으로 호칭합니다.
- ◎ 발표시간 8분 경과 후 한 번 타종합니다 (특별강연은 18~33분).
- ◎ 발표시간 10분 경과 후 두 번째 타종합니다 (특별강연은 20~35분).
- ◎ 발표시간 매 1분 초과 시마다 타종합니다.

포스터 발표

- ◎ 포스터 발표는 다음 시간표에 따라 진행하여 주십시오.

08:00 ~ 08:30	포스터 부착
12:05 ~ 13:30, 14:35 ~ 14:55	포스터 발표 (발표자 대기)
16:30	포스터 탈착

- ◎ 포스터 판의 크기는 약 90 * 110 cm² 입니다.

Invited Lecture (I)

Chairs : Robert Nerem & Hai Bang Lee

- IL-1 Cell Free Engineering of Bone, Cartilage and Tendon Tissues
Jons Hilborn Ph.D.
(*Uppsala Univ., Sweden*)
- IL-2 Global Collaboration of CSTECC Medical Innovation
Mime Egami Ph.D.
(*Tokyo Women's Medical College, Japan*)
- IL-3 Extracellular Matrix-based Biomaterial and Its Application
Byung Hyun Min MD., Ph.D.
(*Ajou Univ., Korea*)

Invited Lecture (II)

Chairs: Chun Ho Kim & So Ra Park

- IL-4 Regenerative Medicine : Cells, Biomaterials, and Unlocking a Bio-Inspired Future
Robert Nerem Ph.D.
(*Georgia Tech., USA*)
- IL-5 Efficient Induction of Neurons from Human ES and iPS Cells
Dong-Wook Kim Ph.D.
(*Yonsei Univ., Korea*)

Invited Lecture (III)

Chairs: Soo Hong Lee & Oh Hyoung Kwon

- IL-6 BioArtificial Materials for Harnessing Host Repair
Andres Garcia Ph.D.
(*Georgia Tech., USA*)
- IL-7 Novel Function of Substance-P as an Injury-inducible Messenger to Mobilize Reparative Stem Cells from Bone Marrow
Youngsook Son Ph.D.
(*Kyung Hee Univ. Korea*)
- IL-8 Dual Growth Factor Delivery with Self-assembling Peptide Nanofiber Hydrogel in Myocardial Infarction
Soo Hyun Kim Ph.D.
(*KIST, Korea*)

Invited Lecture (IV)

Chairs: Ilkeun Kwon & Hueng Jae Chun

- IL-9 Multifunctional Biomaterials Indispensable for Regenerative Medicine and Stem Cell Biology
Yasuhiko Tabata M.D., Ph.D.
(*Kyoto Univ., Japan*)
- IL-10 Osteoblastic Differentiation of Mesenchymal Stem Cells for Bone Tissue Engineering
Taek Rim Yoon M.D., Ph.D.
(*Chonnam Univ., Korea*)
- IL-11 Cell Behavior on Polymer Surfaces
Hai Bang Lee Ph.D.
(*Ajou Univ./KRICT, Korea*)

Student Oral

Chairs : Dongwon Lee & Inkyu Park

- OR-1 Effects of SCs, OECs and BMSCs on DBP/PLGA Nerve Guidance Channel for Spinal Cord Regeneration
Jeong Eun Song, Han Sol Seo, Yu Jin Kim, Hyun Yoo, Dong Kyun Lim, Seok Cheol Yoo, Dongwon Lee[†] and Gilson Khang[†]
Dept of BIN Fusion Tech, Polymer Fusion Res Center & Dept of Polymer Nano Sci Tech, Chonbuk National Univ, 664-14 Dukjin, Jeonju 561-756 Korea
- OR-2 Transplantation of Gabanergic Neurons from ES Cells in Spinal Cord Injury Pain Rat Model
Dae-Sung Kim, Se Jung Jung, Joong Woo Leem, and Dong-Wook Kim
Department of Physiology, College of Medicine, Yonsei University, Seoul, Korea
- OR-3 Mannan-coated Superparamagnetic Iron Oxide Nanoparticles Contrast Agent for Lymph Node MR Imaging *In Vivo*
Hieu Vu-Quang^{1,2}, Sangjoon Lee^{1,5}, Hwa Jeong Lee^{1,5}, Hui Lian Che^{1,2}, Myeong Ju Moon³, Mi Kyong Yoo⁴, Chong Su Cho⁴, Yong Yoen Jeong³, In-Kyu Park^{1,5,†}
¹Department of Biomedical Sciences, Chonnam National University Medical School, Gwangju, Republic of Korea
²Clinical Vaccine R&D center, Chonnam National University, Hwasun, Jeollanam do, Republic of Korea
³Department of Radiology, Chonnam National University Medical School, Gwangju, Republic of Korea
⁴School of Agricultural Biotechnology, Seoul National University, Seoul, Republic of Korea
⁵BioImaging Research center, GIST, Gwangju, Republic of Korea
- OR-4 Effects of Novel Extracellular Matrix Scaffold on Osteogenic Differentiation of Human Mesenchymal Stem Cells
Soon-Sim Yang¹, Young Jick Kim², Byung Hyune Choi³, Jae-HoCho^{2,5}, So Ra Park⁴, Byoung-Hyun Min^{1,2,5,†}
¹Department of Molecular Science & Technology, Ajou University, Suwon, Korea
²Cell Therapy Center, Ajou University Medical Center, Suwon, Korea
³Division of Biomedical and Bioengineering Sciences, Inha University College of Medicine, Incheon, Korea
⁴Department of Physiology, College of Medicine, Inha University, Incheon, Korea
⁵Department of Orthopedic surgery, School of Medicine, Ajou University, Suwon, Korea

OR-5

Vascular Cell Differentiation of Human Adipose-derived Stem Cells based on FGF2-immobilized Substrate

I. S. Park¹, J-W. Rhie², S. H. Kim¹, S-H.Kim^{1,*}

¹Biomaterial Research Center, Division of Life Sciences, Korea Institute of Science and Technology, Seoul, Korea

²Department of Plastic Surgery, College of Medicine, The Catholic University of Korea, Seoul, Korea

Poster Presentation

Chairs :

P-1

Development of Natural Extracellular Matrix Scaffold for Neural Regeneration Using Porcine Spinal Cord

Se-Hoon Kim¹, Byung Hyune Choi², Moon Suk Kim¹, So Ra Park³, Byoung-Hyun Min^{1,4,5}

¹Department of Molecular Science & Technology, Ajou University, Suwon, Korea

²Division of Biomedical and Bioengineering Sciences, Inha University College of Medicine, Incheon, Korea

³Department of Physiology, College of Medicine, Inha University, Incheon, Korea

⁴Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, Korea

⁵Cell Therapy Center, Ajou University Medical Center, Suwon, Korea

P-2

Surface Modification of Extracellular Matrix Biomembrane for Cytophilicity

Bo Ram Song¹, Young Jick Kim², Moon Suk Kim¹, So Ra Park⁴, Byoung-Hyun Min^{1,2,4}

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

²Cell Therapy Center, Ajou University Medical Center, Suwon, Republic of Korea

³Department of Physiology, College of Medicine, Inha University, Incheon, Republic of Korea

⁴Department of Orthopedic Surgery, School of Medicine, Ajou University, Suwon, Republic of Korea

P-3

Bio-inspired Coating of Poly(L-lactide-co-ε-caprolactone) Films for Modulating Myoblasts Behaviors

Yu Bin Lee¹, Young Min Shin¹, and Heungsoo Shin^{1,2,3}

¹Department of Bioengineering,

²Institute for Bioengineering and Biopharmaceutical Research,

³Institute of Aging Society, Hanyang University, Seoul, Republic of Korea

P-4

Bioactive, Enzyme-triggered *In Situ* Crosslinkable Hydrogels for The Control of Myoblast Functions

Indong Jun¹, Kyung Min Park⁴, Ki Dong Park⁴ and Heungsoo Shin^{1,2,3,*}

¹Department of Bioengineering, ²Institute for Bioengineering and Biopharmaceutical Research and

³Institute of Aging Society, Hanyang University, 17 Haengdang-dong, Seongdong-gu, Seoul 133-791, Korea

⁴Department of Molecular Science and Technology, Ajou University, 5 WonChun-dong, Yeoungtong-gu, Suwon 443-749, Republic of Korea

P-5

Hydrogel Fabrication of Core-shell Microcapsules for A Dual Growth Factor Delivery

Dong Hoon Choi^{1,2}, Dong Keun Han¹, Kwideok Park^{1,*}

¹Biomaterials center, Korea Institute of Science and Technology, Seoul, Korea

²School of Life Science and Biotechnology, Korea University, Seoul, Korea

P-6

Evaluation of Osteogenic Potential of Extracellular Matrices with Preosteoblasts

Soon Eon Bae, Dong Keun Han, Kwideok Park[†]
Biomaterials center, Korea Institute of Science and Technology, Seoul, Korea

P-7

The Intracellular Drug Delivery and Anti Tumor Activity of Acetylated Polysaccharide Nanogels

Wooram Park, Kun Na[†]
The Catholic University of Korea, Bucheon-si, Gyeonggi-do, 420-743, Korea

P-8

New Concept Ion Complex Nano-particle to Overcome Multidrug Resistance of Cancer Cells

Hyeona Yim, Kun Na
Dept. of Biotechnology, The Catholic University of Korea, Yeokkok2-dong, Wonmi-gu, Bucheon, Gyeonggi-do, Korea

P-9

Fabrication and Characterization of PCL/PMMA Fibrous Scaffold for Tissue Engineering and Evaluation of DTBP Crosslinking Effect

So-Ra Son, Yang-Hee Kim and Byong-Taek Lee
Dept. of Biomedical Engineering and Materials School of Medicine, Soonchunhyang Univerisyy 366-1 Ssangyong-dong, Cheonan, Korea

P-10

Evaluation of Platelet Adhesion and Protein Absorption on Linoleic Acid Loaded Electrospun PCL/PU Mat for Artificial Blood Vessel Applications

Thi-Hiep Nguyen and Byong-Taek Lee
Dept. of Biomedical Engineering and Materials, College of Medicine, Soonchunhyang University, Cheonan, 330-090, South Korea

P-11 Bone Forming Peptide-1 Enhances Osteoblastic Differentiation via MAPK Signalling Pathway in Mouse Mesenchymal Stem Cells

Hyung Keun Kim^{1,2}, Ji Hyun Kim^{1,2}, Dae Sung Park^{1,2}, Kyung Soon Park¹, Myung Ho Jeong² and Taek Rim Yoon^{1,2,*}

¹Department of Orthopaedic Surgery, Chonnam National University Hwasun Hospital, Hwasun-eup, Hwasun-gun, Jeonnam, South Korea
²Heart Research Center of Chonnam National University Hospital, Hak-dong, Dong-gu, Gwangju, South Korea

P-12 Effect of Various Emulsifiers on The Controlled Release of Docetaxel from Poly (D,L-lactic-co-glycolic acid) Nanoparticles

Young Wook Noh, Cheong Woen Cho
College of Pharmacy, Chungnam National University, Daejeon, South Korea

P-13 Improving Solubility and Cellular Absorption of Paclitaxel with Solid Lipid Nanoparticles and Cyclodextrin

Jong-Suep Baek, Jae-Woo So, Ji-Sook Hwang, Cheong-Weon Cho
College of Pharmacy, Chungnam National University, Daejeon 305-764, South Korea

P-14 Mechanical Stretch Confers the Survival Advantage of Transplanted Fibroblasts and Stimulates Vascular Infiltration in The Diabetic Wound

Eunkyung Lee, Do Yeon Kim, and Youngsook Son[†]
Dept. of Genetic Engineering, Kyung Hee University Seochun-dong, Kiheung-gu, Yongin, Korea

P-15 Characterization of Dedifferentiated Human Costal Chondrocytes

Jeongho Jang¹, Eunkyung Lee¹, Jungsun Lee², EunAh Lee¹, Youngsook Son^{1,*}
¹Laboratory of Tissue Engineering, College of Life Science, Kyung Hee University, Seocheon-Dong, Yongin-Si, Korea
²R&D Institute, Modern Cell and Tissue Technologies Inc, Gongneung-Dong, Nowon-Gu, Seoul, Korea

P-16 Age-related Characteristics of Chondrocytes Derived from Xiphoid Process Cartilage

SeungWoo Nam, EunAh Lee and Wheemoon Cho, Youngsook Son[†]
Musculoskeletal Bioorgan Center and Laboratory of Tissue Engineering, Department of Genetic Engineering, College of Life Science, Kyung Hee University, Yong-in, 446-701, Republic of Korea

P-17 Gamma Irradiation on The Mechanical Property of Bone Graft Carrier for Sterilization

Jong-il Choi¹, Tae-Ho Kim², Tae-Woon Kim², Kwang-Won Lee³, Jae-Hun Kim¹, Beom-Suk Song¹, Ju-Woon Lee^{1,*}
¹Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute, Jeong-eup
²Rion Biotechnology, Jeong-eup
³Eulji University, School of Medicine, Daejeon, South Korea

P-18 Study on The Change of Osteoinductivity of Demineralized Bone Matrix by Ionizing Irradiation

Jong-il Choi¹, Tae-Ho Kim², Tae-Woon Kim², Kwang-Won Lee³, Jae-Hun Kim¹, Beom-Suk Song¹, Ju-Woon Lee^{1,*}
¹Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute, Jeong-eup, Korea
²Rion Biotechnology, Jeong-eup, Korea
³Eulji University, School of Medicine, Daejeon, Korea

P-19 Two-phase Alginate Hydrogel with BMP-2 for Osteogenic Differentiation of Human Bone Marrow Stromal Cells

Hyun Ju Lim¹, Eun Jung Oh¹, Han Do Ghim¹, Jin Hyun Choi¹ and Ho Yun Chung^{2,*}
¹Dept. of Advanced Organic Materials Science and Engineering, Kyungpook National University, Sankyuk-dong, Buk-gu, Daegu, Korea
²Dept. of Plastic and Reconstructive Surgery, School of Medicine, Kyungpook National University, Sankyuk-dong, Buk-gu, Daegu, Korea

P-20 SIGN-R1, a C-type Lectin, Binds to Bip/GRP78 and This Interaction Mediates The Regurgitation of T-cell-independent Type 2 Antigen Dextran Through The Endoplasmic Reticulum

Prabagar, Kyeong-Hyeon Kang and Young-Sun Kang[†]
Dept of Biomedical Sci & Tech, Konkuk Univ, 1 Hwayang-dong, Kwangjin-gu, Seoul 143-701, Korea

P-21 Biomimetic Scaffolds of γ -PGA/Chitosan Nano-sized Hybrid Fibers by Co-electrospinning

Cheol Joo Kim¹, Won Il Kim² and Oh Hyeong Kwon^{1,*}
¹Dept. of Polymer Sci & Eng, Kumoh National Institute of Tech 1 Yangho-dong, Gumi 730-701, Korea
²R&D center, Wonbiogen Ltd. 1 Yangho-dong, Gumi 730-701, Korea

P-22	<p>A Modified Pullulan as an Injectable Hydrogel</p> <p>Eungjae Lee¹, Won Il Kim² and Oh Hyeong Kwon^{1,*}</p> <p>¹Dept. of Polymer Sci & Eng, Kumoh National Institute of Tech, Gumi 730-701, Korea ²R&D center, Wonbiogen Ltd., Gumi 730-701, Korea</p>	P-29	<p>Differentiation of Stem Cells by Small Natural Compound</p> <p>Jin Seon Kwon^{1,2}, E. Sle Kim¹, Gyeong Hae Kim¹, Mi Lan Kang¹, Kkot Nim Kang¹, Bong Lee², Byoung-Hyun Min¹, Jae Ho Kim¹, Moon Suk Kim^{1,*}</p> <p>¹Department of Molecular Science Technology, Ajou University, Suwon, Korea ²Department of Polymer Engineering, Pukyong National University, Busan, Korea</p>
P-23	<p>Antioxidants, Coenzyme Q10, Selenium and Curcumin Inhibited Osteoclast Differentiation by Scavenging Reactive Oxygen Species</p> <p>Ho-Jin Moon, Yu-Shik Hwang and Il Keun Kwon[†]</p> <p>Dept of Maxillofacial Biomedical Eng & Institute of Oral Biology, School of Dentistry, Kyung Hee Univ, Seoul 130-701, Korea</p>	P-30	<p>Protein Release from Injectable Carboxymethyl-cellulose Gel</p> <p>Hyo Won Seo^{1,2}, Gyeong Hae Kim¹, Yun Mi Kang¹, Kkot Nim Kang¹, Da Yeon Kim¹, Bong Lee², Jae Ho Kim¹, Moon Suk Kim^{1,*}</p> <p>¹Department of Molecular Science Technology, Ajou University, Suwon, Korea ²Department of Polymer Engineering, Pukyong National University, Busan, Korea</p>
P-24	<p>BMP-2 Loaded Photo-crosslinkable Hyaluronic Acid/Heparin Hydrogels for Bone Regeneration</p> <p>Min Su Bae, Ji-Eun Kim, Jung Bok Lee and Il Keun Kwon[†]</p> <p>Dept of Maxillofacial Biomedical Eng & Institute of Oral Biology, School of Dentistry, Kyung Hee Univ, Seoul 130-701, Korea</p>	P-31	<p><i>In Vivo</i> Biocompatibility Evaluation of Three Dimensional Scaffold</p> <p>So Mi Yoon^{1,2}, Yun Mi Kang¹, Bong Lee², Byoung-Hyun Min¹, Jae Ho Kim¹, Moon Suk Kim^{1,*}</p> <p>¹Department of Molecular Science Technology, Ajou University, Suwon, Korea ²Department of Polymer Engineering, Pukyong National University, Busan, Korea</p>
P-25	<p>Poly(L-lactic acid) Nanocylinders as Nanofibrous Structure for Bone Tissue Engineering Scaffolds</p> <p>Jung Bok Lee¹, Hana Park¹, Min Su Bae¹ and Il Keun Kwon^{1,*}</p> <p>Dept of Maxillofacial Biomedical Eng & Institute of Oral Biology, School of Dentistry, Kyung Hee Univ, Seoul 130-701, Korea</p>	P-32	<p>Examination of Three-dimensional Chitosan Microfiber as <i>In Vitro</i> and <i>In Vivo</i> Scaffolds</p> <p>Bit Na Lee¹, Yun Mi Kang¹, Gyeong Hae Kim¹, Kkot Nim Kang¹, Da Yeon Kim¹, Jae Ho Kim¹, Byoung-Hyun Min^{1,2}, Moon Suk Kim^{1,*}</p> <p>¹Department of Molecular Science and Technology, Ajou University, Suwon, Korea ²Department of Orthopedic Surgery, Ajou University, Suwon, Korea</p>
P-26	<p>Cyclodextrin-Covered Gold Nanoparticles for Tumor-Targeted Delivery of Paclitaxel</p> <p>Dong Nyoung Heo, Ho Jin Moon, Sang Cheon Lee and Il Keun Kwon[†]</p> <p>Dept of Maxillofacial Biomedical Eng & Institute of Oral Biology, School of Dentistry, Kyung Hee Univ, Seoul 130-701, Korea</p>	P-33	<p>Human Peripheral Blood Mononuclear Cell Transplantation Enhanced for Bone Formation</p> <p>Hee Seok Yang¹, Ga Hee Kim¹, Wan Geun La², Suk Ho Bhang², Tae-Jin Lee¹ and Byung-Soo Kim^{2,*}</p> <p>¹Dept. of Bioengineering, Hanyang University, Seoul 133-791, Korea ²School of Chemical and Biological Engineering, Seoul National University, San 56-1, Sillim-dong, Gwanak-gu, Seoul 151-744, Korea</p>
P-27	<p>Glycol Chitosan Nanoparticle for <i>In Vivo</i> Cancer Imaging and Therapy</p> <p>Jin Hee Na^{1,2}, Heebeom Koo¹, Jea Hyung Park², Ick Chan Kwon¹, Seo Young Jeong² and Kwangmeyung Kim^{1,*}</p> <p>¹Biomedical Research Center, Korea Institute of Science and Technology, Seoul, South Korea ²Department of Life and Nanopharmaceutical Science Kyung Hee University, Seoul, South Korea</p>		
P-28	<p>An Efficient Conversion of Human ES and iPS Cells into Neural Cells Regardless of Differentiation Propensities</p> <p>Dae-Sung Kim, Yong Jun Huh and Dong Wook Kim</p> <p>Department of Physiology, Yonsei Univ., College of Medicine</p>		

P-34 Redifferentiation of Dedifferentiated Chondrocytes Using Spinner Flask Culture

Tae-Jin Lee¹, Suk Ho Bhang², Wan-Guen La², Hee Seok Yang¹, Jun Yeup Seong¹, Haeshin Lee³, Gun-Il Im⁴, Soo-Hong Lee⁵, Byung-Soo Kim^{2,*}

¹Department of Bioengineering, Hanyang University, 17 Haengdang-dong, Seongdong-gu, Seoul, 133-791, Republic of Korea

²School of Chemical and Biological Engineering, Seoul National University, Seoul 151-744, Republic of Korea

³Department of Chemistry and Graduate School of Nanoscience and Technology, Institute for the BioCentury & NanoCentury, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 305-701, Republic of Korea

⁴Department of Orthopaedics, Dongguk University International Hospital, Goyang, 411-773, Republic of Korea

⁵CHA Stem Cell Institute & CHA Biotech, Pochon CHA University, Seoul 135-907, Korea

P-35 Synergistic Chondrogenesis of Mesenchymal Stem Cells by Matrix Interaction and Growth Factor

Suk Ho Bhang¹, Jeong-Yi Jeon², Wan-Geun La¹, Jun Yeup Seong², Seong Eon Ryu², Byung-Soo Kim^{1,*}

¹School of Chemical and Biological Engineering, Seoul National University, San 56-1, Sillim-dong, Gwanak-gu, Seoul 151-744, Republic of Korea

²Department of Bioengineering, Hanyang University, 17 Hangdang-dong, Sungdong-gu, Seoul 133-791, Republic of Korea

P-36 Cellular Environmental Control of hDFs in Chitosan-based Scaffolds for Tissue Engineered Dermis

Seong Mi Yu, Sang Jun Park, Yong Jae Gin and Chun-Ho Kim[†]

Laboratory of Tissue engineering, Korea Institute of Radiological and Medical Sciences, Seoul, 139-240, Republic of Korea

P-37 Physicochemical Properties and Biocompatibility of Water-soluble Chitosan Derivatives

Sang Jun Park, Yong Jae Gin and Chun-Ho Kim[†]
Laboratory of Tissue engineering, Korea Institute of Radiological and Medical Sciences, Seoul, 139-240, Republic of Korea

P-38 Biocompatibility of α - and β -chitosan-based Scaffolds *In Vitro*

Sang Jun Park, Yong Jae Gin and Chun-Ho Kim[†]
Laboratory of Tissue Engineering, Korea Institute of Radiological and Medical Sciences, Seoul, 139-240, Republic of Korea

P-39 Fast and Efficient Isolation of Mouse Mesenchymal Stem Cells with a Biocompatible Polymer

June Seok Heo¹, Hyun Ok Kim^{1,2} and Han-Soo Kim^{1,2}, Jungmok You³, Taehun Park³, Youjeong Choi¹, Eunyoung Kim¹

¹Cell Therapy Center, Yonsei University College of Medicine, Seoul, Republic of Korea

²Department of Laboratory Medicine, Yonsei University College of Medicine, Seoul, Republic of Korea

³Department of Chemical and Biomolecular Engineering, Yonsei University, Seoul, Republic of Korea

P-40 Characterization of PLGA Film Depend on Gamma-ray Doses

Sun-Young Jo^{1,2}, Youn-Mook Lim^{1,*}, Hui-Jeong Gwon¹, Jong-Seok Park¹, Heungsoo Shin² and Young-Chang Nho¹

¹Radiation Research Division for Industry & Environment, Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute

²Department of Bioengineering, Division of Applied Chemical and Bio Engineering, Hanyang University, Haengdang-dong, Seongdog-gu, Seoul, 133-791, South Korea

P-41 Characterization of Chitosan-Poly(ethylene oxide) Hydrogel

Doyeon Kim, Sumi Kim, Jung-hoon Woo, Seongyeon Jo, Eunyoung Shin, Yoonjae Hwang, Chulho Shin and Insup Noh

Dept. of Chemical Engineering, Seoul National University of Technology Gongnung 2-dong, Nowon-gu, Seoul, Republic of Korea

P-42 알긴산이 피부상처 치유에 미치는 영향

박대환^{1,*}, 이윤정¹, 최성곤²
¹대구가톨릭대학교 성형외과, ²에이징

P-43 Effects of Hypoxia Mimicking Chemicals on the Chondrogenic Differentiation of Human Clonal Mesenchymal Stem Cells (hcMSCs) Using CoCl₂

A Rum Seo¹, Mi Hyun Lim², Byung Hyune Choi², Kil Hwan Kim¹, Byoung-Hyun Min³, Sun Uk Song⁴, So Ra Park^{1,*}

¹Department of Physiology, Inha University College of Medicine, Incheon, Korea

²Division of Biomedical and Bioengineering Sciences, Inha University College of Medicine, Incheon, Korea

³Department of Orthopaedic Surgery, School of Medicine, Ajou University, Suwon, Korea

⁴Clinical Research Center, Inha University Hospital, Incheon, Korea

P-44

Changes in the Expression Pattern of Stem Cell Markers in Rat Bone Marrow Mononuclear Cells During Primary Culture

Na Kyeong Kim¹, Byung Hyune Choi², Kil Hwan Kim¹, Hyeonseon Park³, Byoung-Hyun Min^{4,5,6}, So Ra Park^{1,*}

¹Department of Physiology, Inha University College of Medicine, Incheon, Korea

²Department of Biomedical and Bioengineering sciences, Inha University College of Medicine, Incheon, Korea

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Application of Human Tooth Derived Materials for Tooth and Bone Regeneration

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Characterization of Human Mesenchymal Stem Cells Derived from Amniotic Fluid : Comparison to Bone Marrow Mesenchymal Stem Cells

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Surface Modification of Solid-free Form-based Scaffolds Using Fibrin/Hyaluronic acid Hydrogel and BMP-2 for Bone Tissue Engineering

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Porous Membrane Culture Technique for hESCs Expansion on Proliferating Feeder Cells

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Chondrogenic Property Recovery of Dedifferentiated Chondrocyte by Co-Gene Delivery of BMP2/SOX9 Bicistronic Vector

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Effects of Replicated Lotus Leaf Structure on Adipose-derived Stromal Cell Behaviors

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Layered Coating of Collagen and Nerve Growth Factor Guides Peripheral Nerve Regeneration

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Electrical Stimulation Activates Human Mesenchymal Stromal Cells in Three Dimensional Cultures to Favor Regenerative Osteoblast Biology

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P-53 MR Imaging and Gene Therapy of Malignant Breast Cancer Mediated by SPION-encapsulated Polymersome

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P-54 Tumor Suppressor Gene Therapy Assisted by PEI-coated Superparamagnetic Iron Oxide Nanoparticles

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P-55 Minimal Invasive Surgery of Cystic Bone Disease using Demineralized Bone Matrix in Skeletally Immature Patients.

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P-56 Chronic L-DOPA-induced Dyskinesia Relates with Striatal Serotonin Level in Hemiparkinsonian Rats

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P-57 Involvement of GSK3 β in Mitochondrial Dysfunction and Neuronal Cell Death of Fipronil-treated Neurons

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P-58 Dopaminergic Maturation by Retrovirus Gene Inducible Systems

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P-59 Synthesis and Characterization of Redox-Sensitive PEG-PBLG Block Copolymers for Drug Delivery

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P-60 Effect of L-DOPA for BM-MSCs proliferation on etched titanium surface

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P-61 Effect of The Nano-hydroxyapatite - Silk Scaffolds for Osteogenesis
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P-62 Comparison of Biocompatibility for The Scaffolds Between *In Vivo* and *In Vitro*
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P-63 Comparison of Methods for Repair of Acute Tympanic Membrane Perforations: Silk Patch Versus Paper Patch
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P-64 Deciduous Incisions and Supernumerary Teeth as Stem Cell Sources for SHED
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P-65 Pattern Width and Pore Size Control Using Printer Control Parameters in a Hydrogel - based Bioprinting System
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P-66 Development of Biological Functions for Polymeric Materials Utilized in Biomedical Application
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P-67 *In Vivo* Tracking of Human Neural Stem Cells in Experimental Huntington's Disease
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P-68 Evaluation of Bone Repair Efficiency by Round Granular Bone Substitutes of Various Composition and Porous Structure
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P-69 Adipose Tissue-Derived Stem Cells Integrated Fat Graft as Biologic Filler to Reconstruct Soft Tissue
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P-70 Role of Fibrin Structure on Endothelial Cell Differentiation of Skeletal Muscle-Derived Stem Cells
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P-71 Cardiolipin-based Anionic Liposomes for Mitoxanthrone Chemotherapy
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Rat Hindlimb Allotransplantation Using Dendritic Cell Presensitization

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Biodegradable Porous Poly(L-lactide) Scaffolds with BMP-2 Releasing Nano-Hydroxyapatite for Bone Regeneration

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Porous PLGA Microspheres with BMP-2 Incorporated Nano-Hydroxyapatite for Bone Regeneration

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Immobilization of Adhesive Nanoparticles on Ti Surfaces for Controlled BMP-2 Release

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Preparing of Nano Hydroxyapatite Particles by Spray Pyrolysis

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Preclinical Application of Tissue-Engineered Suburethral Sling Meta-Mesh in an Animal Model of Stress Urinary Incontinence

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In Vivo Evaluation of Stem Cell-Based Tissue-Engineering Constructs for the Treatment of Lymphedema

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Comparison of Absorbable GBR Membrane Fabricated from Porcine Dermis (CollaGuide[®]) with Bio-Gide[®] and BioMend[®]

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RIN-5F Islet Cell Line as an Alternative Source for the Invention of Chondrocyte-sheeting Immuno-delusive and -isolated Bioartificial Pancreas

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A New Manufacturing Method for Insulin-secreting Complex-cell Spheroid with Hepatocyte

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The Development of Cellular Spheroids Using Synovial Cells and Chondrocytes for the Autologous Chondrocyte Implantation

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Preparation of Galactose Modified Poly(L-lactic-co-glycolic acid) Substrates and Their Influence on Hepatocyte Adhesion and Proliferation

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Molecular Signatures Associated with WSC-Induced Murine Macrophage Cell Line RAW 264.7 Activation

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WSC Induces Murine Macrophage Cell Line RAW 264.7 Classical Activation and Down-Regulates the Levels of Histone H2A mRNA

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A Comparative Study of the Therapeutic Effects of G-CSF and GM-CSF on Spinal Cord Injury

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Heparin-based Self-assembled Nanoparticle for Photodynamic Therapy

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Regulation of Microenvironment of Ischemic Brain Ameliorates Neurologic Deficits in a Rat Model of Ischemic Stroke

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Efficient Cartilage Repair via Complex of PLCL/Gelatin Scaffold and Heparin-Based Hydrogel as a Scaffold for Cartilage Tissue Engineering

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Physicochemical Characterizations and Biocompatibility Evaluations of Electrospun EGCG-eluting PLGA Nanofiber Mesh as Anti-Adhesion Barrier

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A Rapid and Simple Method for Isolation of Nuclei from Mouse Embryonic Stem Cells

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P-92 Dental Papilla Stem Cell and Adipose Tissue-derived Stem Cell tailored to Neural and Cartilage Tissue Engineering

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P-93 Enhanced Viability of Cells Under Hypoxic Environment by Oxygen Generating Microspheres

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P-94 Development of Hydrogel Based Microspheres with Controlled Sizes

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P-95 Injectable Composite Hydrogels for Localization of Muscle Cells *In Vivo*

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P-96 ECM Protein Hydrogels for Cell Injection

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P-97 Smart Microspheres Producing Oxygen in Controlled Manner for Tissue Engineering

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P-98 Synthesis and Biocompatibility of a Thermosensitive PCL-Pluronic Hydrogel Using Human Amniotic Fluid Stem Cells

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P-99 Engineered Cartilage Covered Ear Implants for Auricular Cartilage Reconstruction

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P-100 Bioengineering Endothelialized Neo-Corneas

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P-101 Real-Time Quantitation of Tissue Growth in Biodegradable Scaffolds

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P-102 Near-Infrared Fluorophores for Targeting Endocrine Glands

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P-103 Bilayered Scaffold for Engineering Cellularized Blood Vessels

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P-104 Biomaterial Induces Host Stem Cell Recruitment for *In Situ* Muscle Tissue Regeneration

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P-105 The Inflammatory Responses to PLGA Scaffold Depending on Silk Fibroin Contents: *In Vivo* Test

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P-106 Potentialities of Silk Fibroin on Reduction of Inflammatory Reaction of PLGA

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P-107 *In Vitro* Interaction between Bone Marrow Stromal Cells and Retinal Pigment Epithelial Cells

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P-108 Preparation and Characterization of Purified Alginate for the Application of Regenerative Medicine

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P-109 Effect of Purified Alginate Microcapsules on the Regeneration of Chondrocyte Cells

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- P-111 Characterization and Enhanced Dissolution Rate of Nateglinide Solid Dispersion Using Polyvinylacetal Diethylaminoacetate (AEA)
- Yong Ki Kim, Dong Kyun Lim, Seon Kyoung Lee, Shin Eom, Hyun Jin Park, Su Jin Kim, Yu Jin Kim, Dongwon Lee[†] and Gilson Khang[†]
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- Yu Jin Kim, Hyeon Yu, Hyoung Eun Kim, Yong Ki Kim, Seok Cheol Yoo, Jeong Eun Song, Dongwon Lee[†] and Gilson Khang[†]
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- P-113 Effects of the SIS Sheet on the Behavior of Olfactory Ensheathing Cell
- Yu Jin Kim, Hyeon Yu, Hyoung Eun Kim, Yong Ki Kim, Seok Cheol Yoo, Jeong Eun Song, Dongwon Lee[†], and Gilson Khang[†]
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- P-114 Effect of DBP on the Regeneration of Articular Cartilage in DBP/PLGA Scaffold
- Hyoung Eun Kim, Seon Kyoung Lee, On You Kim, Woo Young Ahn, Jeong Eun Song, Dongwon Lee[†] and Gilson Khang[†]
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- P-115 Compressive Strength of PLGA Scaffolds Seeded Nucleus Pulposus Cells Depending on Pore Size : *In Vivo* Experiment
- Hyoung Eun Kim, Seon Kyoung Lee, Woo Young Ahn, Jeong Eun Song, Dongwon Lee[†] and Gilson Khang[†]
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- Hye Lin Kim, Hanna Yoo, Su Jin Kim, Hyun Jin Park, Minsung Hong, Dongwon Lee[†] and Gilson Khang[†]
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- P-117 Characterization and Release Behavior of Zaltoprofen Tablet with Additives
- Hyunjin Park, Donghyun Hong, Soojin Kim, Sujin Kim, Yiseul Song, Kyungryul Seung, Dongwon Lee[†] and Gilson Khang[†]
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- P-118 Antioxidant and Anti-Inflammatory Activities of Hydroxybenzyl Alcohol Releasing Biodegradable Polyoxalate Nanoparticles
- Hyunjin Park, Soojin Kim, Sujin Kim, Yiseul Song, Kyungryul Seung, Donghyun Hong, Gilson Khang[†] and Dongwon Lee[†]
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- Ji Yeon Bae, On You Kim, Ji Hye Hwang, Jeong Eun Song, Dongwon Lee[†] and Gilson Khang[†]
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- P-120 Immune Reaction of Purified and Non-purified Alginate Film
- Ji Yeon Bae¹, OnYouKim¹, Ji Hye Hwang¹, Jeong Eun Song¹, Kun Ho Yoon², Dongwon Lee^{1,†} and Gilson Khang^{1,†}
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P-121 Characterization and Enhanced Dissolution Property of Raloxifene by HCl Solid Dispersion

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P-122 Improved Dissolution Behavior of Pramlintide by Nano-Solid Dispersion with Poly(N-vinylpyrrolidone)

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P-123 Effect of Hydroxypropylmethylcellulose with Viscosity on the Improvement of Dissolution Rate of Alfuzosin HCl Granule Tablet

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P-124 Characterization and Controlled Release of Solid Dispersed Cilostazol with Various Excipients

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P-125 Preparation and Characterization of Albumin-loaded Silk/PLGA Scaffold for Neural Tissue Engineering.

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P-126 A Study of Mechanical Property and Cell Compatibility on Biodegradable Silk/PLGA Hybrid Scaffold; *In Vitro*

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P-127 Effect of Crosslinking Agent on the Proliferation and Phenotype of Corneal Endothelial Cells on Alginate Films.

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P-128 Regeneration of Biodisc Using Annulus Fibrosus Cell on Hyaluronic Acid Loaded PLGA Scaffold : *In Vivo* Test

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P-129 Fabrication and Characterization of Raloxifene-HCl Loaded PLGA Double-Layered Microspheres

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P-130 Effect of the Preparation Methods on *In Vitro* Release Behavior from Valsartan-Loaded PLGA Microspheres

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P-131 The Controlled Release Effect of the Additives on Sibutramine HCl Tablet

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Chemicophysical Property and Release Behavior in the Different Manufacturing Method of Ibuprofen Solid Dispersion with Cellulose Acetate

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Release of Doxazosin from Multi-Layered Pellet Using HPMC/EC Blending

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Polyoxalate Nanoparticles as a Biocompatible and Biodegradable Drug Delivery Vehicle

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Preparation and Characterization of Valsartan loaded Polyoxalate Microspheres

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Solubility Characterization and Improved Dissolution of Pranlukast with the Surfactant

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Composition of DBP/PLGA Scaffold and DBP Sponge for Intervertebral Disc Regeneration

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Effect of DBP Gel on Regeneration of Tissue Engineered Intervertebral disc; *In Vivo* Test

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Differentiation and Proliferation of Bone Marrow Stromal Cell into Schwann Cells

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The Growth Behavior of Schwann Cell In Hyaluronic Acid Penetrated PLGA Scaffold for Nerve Regeneration

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Effect of Silk Contents on the Attachment and Proliferation of Corneal Endothelial Cells on Silk/PLGA Films

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The Growth Behavior of Retinal Pigment Epithelial Cells on SIS/PLGA Film

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Effects of Laminated Cylindrical Scaffolds of Keratin/PLGA Hybrid Film on Annulus Fibrous Tissue Regeneration

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The Study on DBP Sponge and DBP Gel Impregnated PLGA Scaffolds for Intervertebral Disc Tissue Regeneration

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Co-Culture of Nucleus Pulposus Cell and Bone Marrow Stem Cellular Differentiation *In Vitro*

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Effect of Silk Content on the Proliferation and Phenotype of Nucleus Pulposus Cell on Silk/PLGA Scaffolds.

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Co-culture according to the Ratio of OECs and BMSCs on Differentiation and Proliferation of BMSCs

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Biodegradable PLGA/DBP Nerve Channel Seeded with Olfactory Ensheathing Cells to Promote Spinal Cord Regeneration

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Characterization and Release Behavior of Rosiglitazone Maleate Solid Dispersion with Various Ratio of PVP and HPMC

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Characterization and Release Behavior of Rosiglitazone Maleate Solid Dispersion with Various Ratio of PVP and HPMC

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In Vitro Release Behavior of Pramlukast-HPMC Solid Dispersion

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Characterization of Valsartan With Various Viscosity of Hydroxypropylmethylcellulose

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The Growth Behavior Patterns of Retinal Pigment Epithelium cells on Purified Alginate film

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P-154 Attachment and Proliferation of RPE Cell by Co-Culture of Retinal Pigment Epithelial Cells and Bone Marrow Stem Cells on PLGA/Silk Film

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P-155 Attachment and Proliferation of Corneal Endothelium Cells on SIS/PLGA Film

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P-156 Characterization and Improvement of Dissolution Rate of Prothionamide and PVP K-30/Eudragit RSPO Solid Dispersion by Spray Drying

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P-157 Characterization and Controlled-Release of Solid Dispersed Valsartan By Eudragit L100/Hydroxypropyl Methylcellulose

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P-158 Effect of SIS/PLGA Films Seeded RPEs on the Proliferation and Differentiation of BMSCs

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P-159 A Study on Proliferation and Phenotypical Stability of Corneal Endothelial Cells on SIS Sheets

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P-160 Effect of Various Viscosity of Hydroxypropyl Methylcellulose on Pioglitazone HCl Tablet for Sustained-release Formulation

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P-161 Characterization and Controlled-Release of Solid Dispersed Valsartan By Eudragit L100/Hydroxypropyl Methylcellulose

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P-162 The Effect of Ethanol and DMSO Concentrations on Transdermal Zaltoprofen Delivery

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P-163 Characterization and Improved Dissolution Rate of Aceclofenac Solid Dispersion in PVP

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P-164 Improvement of the Dissolution Rate for Poorly Water-soluble Drug Pranlukast by Using Spray-drying with Plasdone S-630

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Effect of Alginate Purification on the Survival of Annulus Fibrosus Cell in for the Regeneration of Disc

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Co-cultured Bone Marrow Stem Cells with Chondrocytes into Purified Alginate Microcapsules for the Articular Regeneration

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Co-Culture of Nucleus Pulposus Cells and BMSCs on DBP/PLGA Scaffolds

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The Inflammatory Responses on Hyaluronic Acid Loaded PLGA Scaffold: *In Vitro* and *In Vivo* Test

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Effect of Penetrated Demineralized Bone Solution into PLGA Scaffold on Chondrogenesis

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Role of Toll-like Receptor 4 in Vascular Responses of Female Mouse Aorta

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An Epac Activator Causes Relaxation of The Porcine Coronary Artery

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Natural Scaffolds for Retinal Pigment Epithelial Cells *In Vitro*

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Effect of DBP Gel in DBP/PLGA Scaffolds on the Promotion for Spinal Cord Regeneration

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Influence of Bone Marrow Derived-Mesenchymal Stem Cells on the Behavior of Endothelial Cells in the Collagen Type I Gel

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