

Schedule (일정표)

▶ 11월 2일 목요일

Time	Contents			
	박희택홀 (Hall A)	양윤선홀 (Hall B)	GDR-1 (Hall C)	GDR3-6
14:00-18:00	Symposium 1: TRP Channel (Invited Speakers, Markus Delling, Kido Mizuho, Sponsored by Seoul National University and Prof. So I)			Po-1 (GDR3-4, 오후 1시부터 게시)
18:00-20:00			Poster Presentation and Welcome Reception (Sponsored by Korea Ion Channel Research Group)	

▶ 11월 3일 금요일

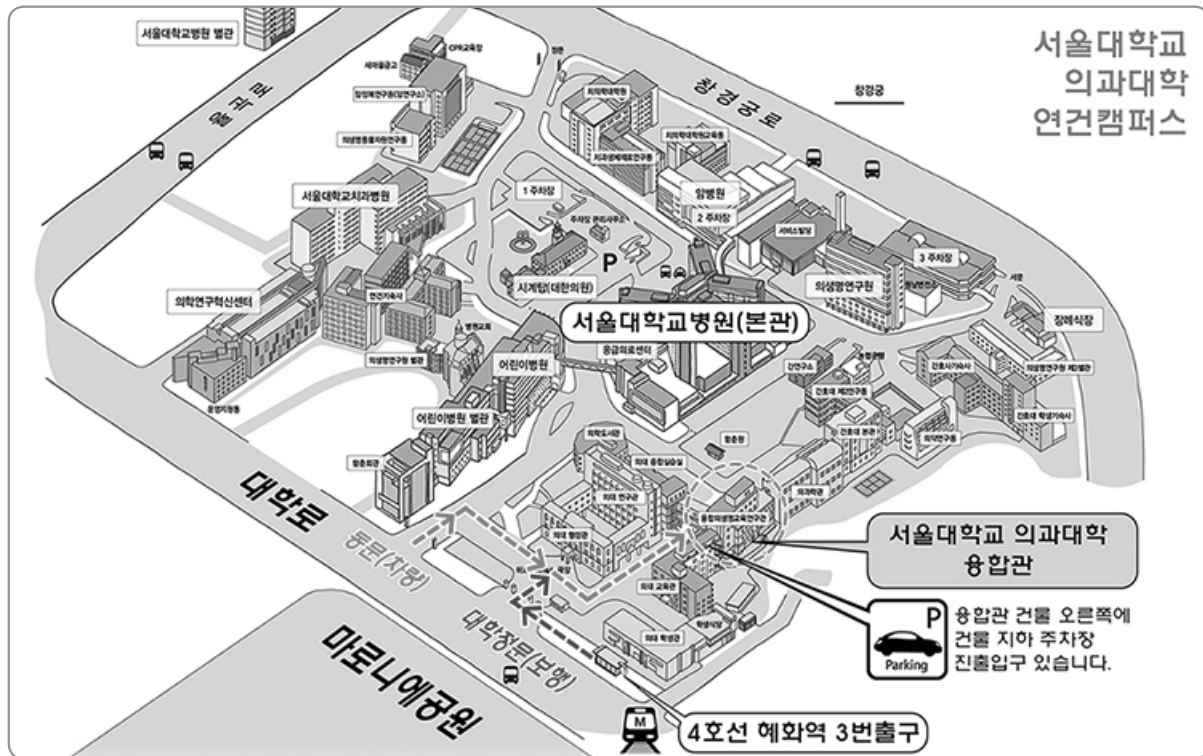
Time	Contents			
	박희택홀 (Hall A)	양윤선홀 (Hall B)	GDR-1 (Hall C)	GDR3-6
09:00-09:15	Opening Ceremony			
09:15-11:30	Symposium 2: Physiology of Neuropsychiatric Disease	Symposium 3: Inflammation and Pathophysiological Signaling (Sponsored by MRC in Ehwa Womans University)	Symposium 4: Cardiac Physiology and Arrhythmia	
11:30-12:00	Coffee Break & Poster Presentation (지정번호 발표자 대기)			
12:00-12:45	Nikon Luncheon Seminar (Lunch, 100 Boxes, 12:00-12:40)	Steering Committee Meeting (Lunch)		
12:45-14:00	Poster-Oral (1) (12:45-14:00)		Poster-Oral (2) (12:45-14:00)	
14:00-14:30	Coffee Break & Poster Presentation (지정번호 발표자 대기)			
14:30-15:30	Plenary Lecture - Prof. Paul Worley			Po-2 (GDR 4-5)
15:30-18:00	Symposium 5: Learning & Memory	Symposium 6: Mitochondria Physiology (Invited Speaker Prof. Wollheim, Sponsored by MRC in Yonsei Wonju University)	Symposium 7: Vascular Physiology (Invited Speaker - Prof. Michael Hill, Sponsored by Ischemic/Hypoxic Disease Institute, Seoul National University)	
18:00-20:00			Group Photo (사진촬영) Official Buffet-Dinner (간친회)	

▶ 11월 4일 토요일

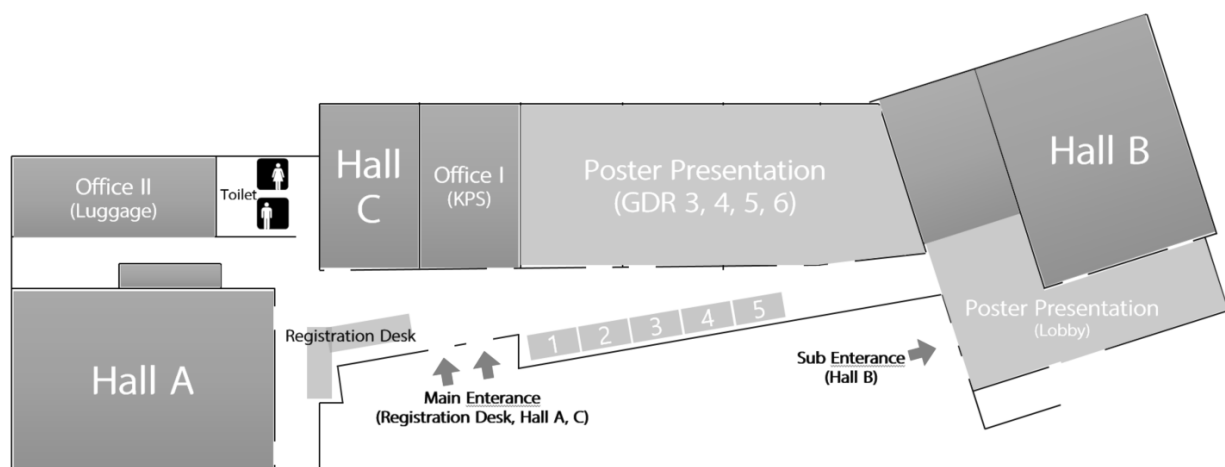
Time	Contents			
	박희택홀 (Hall A)	양윤선홀 (Hall B)	GDR-1 (Hall C)	GDR3-6
09:00-11:15	Symposium 8: KSEP/IMPACT Symposium (Invited Speakers; David A. Hood, P. Darrell Neuffer)	Symposium 9: Chemical Senses (Sponsored by MRC in Yonsei University College of Dentistry)	Symposium 10: Recent Biomedical Approaches in the Outside	Po-3 (GDR 5-6)
11:15-12:15	Coffee Break & Poster Presentation (지정번호 발표자 대기)			
12:15-13:30	IMPACT-Lunch for KSEP Members and Speakers	Yudang Awards Ceremony (유당학술상 시상식) KPS Members Annual Ceremoy with Lunch (대한생리학회총회)		
13:30-17:00	Symposium 11: KSEP/IMPACT Symposium (Invited Speaker; Jacob M. Haus)	Symposium 12: Functional Food	Symposium 13: Current Status of Research on Novel Tissue, Primo Vascular System (Invited Speakers, B.S. Kwon, K.A. Kang)	

Venue Guide (학술대회장 안내)

캠퍼스 맵



서울대학교 의과대학 융합관



이사회: Hall B (양윤선홀) - 11.3(금) 12:00

전시 부스: 1-싸이텍코리아, 2-매직트리, 3-에드사이언, 4-라이프텍, 5-KISTI

Scientific Program (학술프로그램)

► Symposium (11월 2일 목요일)

Contents	
Symposium 1: TRP Channel	Chair: 서인석 (서울대)
Dual action of the $G\alpha_q$ -PLC β -PI(4,5)P $_2$ pathway on TRPC1/4 and TRPC1/5 heterotetramers	<i>Jongyun Myeong (Seoul National University College of Medicine)</i>
Functional role of coiled coil domain in the gating of TRPC3/6	<i>Kyu Pil Lee (Chungnam National University, College of Veterinary Medicine)</i>
Renoprotection of Klotho through TRPC6 downregulation	<i>Seung-Kuy Cha (Yonsei University Wonju College of Medicine)</i>
Role of Trp channels in the control of feeding behavior and metabolism	<i>Jong-Woo Sohn (Department of Biological Sciences, Korea Advanced Institute of Science and Technology)</i>
Ca $^{2+}$ signaling in primary cilia during development and disease	<i>Markus Delling (UCSF, USA)</i>
Oral barrier formation via temperature-sensitive TRP channels	<i>Kido Mizuho (Saga University, Japan)</i>
The hypothalamic TRPV1 channels in regulation of food intake	<i>Dong Kun Lee (Gyeongsang National University School of Medicine)</i>
Acceleration of skin barrier restoration by topical botanical products via transient receptor potential V3	<i>Joo Hyun Nam (Dongguk University College of Medicine)</i>
The intracellular Ca $^{2+}$ channel TRPML3 is a PtdIns3P effector that regulates early autophagosome biogenesis	<i>Hyun Jin Kim (Sungkyunkwan University School of Medicine)</i>
The ER/PM microdomain, PI(4,5)P $_2$ and the regulation of STIM1-Orai1 channel function	<i>Seok Choi (Chosun University School of Medicine)</i>

► Poster Oral Presentation (11월 3일 금요일)

Time	Contents
12:45-12:55	PO-A-01 (P1-02): Novel KCNQ4 mutations in Korean patients with nonsyndromic hearing loss <i>Hyun Been Choi (Sungkyunkwan University)</i>
12:55-13:05	PO-A-02 (P1-04): PRMT7 regulates neuronal excitability via modulation of NALCN activity <i>Xianlan Wen (Sungkyunkwan University)</i>
13:05-13:15	PO-A-03 (P3-02): Peripheral GABA _A receptor-mediated signals facilitate chronic inflammatory pain <i>Pa Reum Lee (Seoul National University)</i>
13:15-13:25	PO-A-04 (P3-03): SHP2 mutation mediated cell type specific dysregulation of Ras-Erk signaling pathway <i>Hyun-Hee Ryu (Seoul National University, Chung-Ang University)</i>
13:25-13:35	PO-A-05 (P3-04): Climbing fiber burst-mediated sensory coding is directly represented in post-synaptic Purkinje cell <i>Seung-Eon Roh (Seoul National University, Kyung Hee University)</i>
13:35-13:45	PO-A-06 (P3-05): Channel-mediated GABA release from reactive astrocytes in epileptic hippocampus <i>Chiranjivi Neupane (Chungnam National University)</i>
13:45-13:55	PO-A-07 (P4-02): The E3 ligase c-Cbl inhibits cancer cell migration by neddylation of the proto-oncogene c-Src <i>Jun Bum Park (Seoul National University)</i>
12:45-12:55	PO-B-01 (P2-03): STIM2 and STIM1 have similarities and differences, but both regulate Ca ²⁺ movement in skeletal muscle <i>Mi Ri Oh (The Catholic University of Korea)</i>
12:55-13:05	PO-B-02 (P1-01): Calcium-sensing receptor is a critical mediator of chemotaxis and chemokinesis in immune cells <i>Fengjiao Chang (Seoul National University)</i>
13:05-13:15	PO-B-03 (P1-03): Molecular mechanism of voltage-gated Ca ²⁺ channel regulation by membrane PIP ₂ <i>Cheon-Gyu Park (DGIST)</i>
13:15-13:25	PO-B-04 (P4-01): WNK1-mediated Ca ²⁺ signaling is a novel culprit for hepatic stellate cell activation and fibrosis <i>Kyu-Hee Hwang (Yonsei University Wonju College of Medicine)</i>
13:25-13:35	PO-B-05 (P2-01): Higher vulnerability of catecholamine-induced arrhythmia in isolated right atrial myocytes <i>Ami Kim (Sungkyunkwan University)</i>
13:35-13:45	PO-B-06 (P3-06): Singular mechanisms of the thermal sweating to central sudomotor in tropical Africans <i>Jeong-Beom Lee (Soonchunhyang University)</i>
13:45-13:55	PO-B-07 (P7-01): Mesothelial cells demarcate the subunits of organ surface primo vascular tissue <i>Chae Jeong Lim (Seoul National University)</i>

► Symposium (11월 3일 금요일)

Contents	
Symposium 2: Physiology of Neuropsychiatric Disease	Chair: 신찬영 (건국대), 이용석 (서울대)
Reduction of microRNA targeting Drd2 leads to thalamocortical dysfunction in schizophrenia mouse models <i>Sungkun Chun (Chonbuk National University Medical School)</i>	
Synapse organization by autism-associated synaptic adhesion molecules <i>Jaewon Ko (Department of Brain and Cognitive Sciences, DGIST)</i>	
Excessive dopamine receptor activation in the dorsal striatum promotes autistic-like behaviors <i>Pyung-Lim Han (Department of Brain and Cognitive Sciences, Ewha Womans University)</i>	
Critical role of NMDA receptor function on the modulation of behavioral deficits in animal models of autism spectrum disorder <i>Chan Young Shin (Konkuk University School of Medicine)</i>	
Symposium 3: Inflammation and Pathophysiological Signaling	Chair: 이지희 (이화여대)
Identification of Sirtuin 6 as a novel target in macrophage switch and inflammation <i>Byung-Hyun Park (Chonbuk National University Medical School)</i>	
SREBP-1 links lipogenesis to macrophage phagocytosis via mTOR signaling <i>Seung-Soon Im (Keimyung University School of Medicine)</i>	
Effect of necrotic cell microenvironment on glioma progression <i>Youn-Hee Choi (Ewha Womans University)</i>	
Programming of macrophages by apoptotic cancer cells inhibits cancer progression and metastasis <i>Jihee Lee (Ewha Womans University)</i>	
Symposium 4: Cardiac Physiology and Arrhythmia	Chair: 우선희 (충남대)
Modulation of autonomic nerve system and cardiac arrhythmia <i>Eue-Keun Choi (Department of Internal Medicine, Seoul National University Hospital)</i>	
Sympathetic nerve blocks promote anti-inflammatory response by activating JAK2-STAT3-mediated signaling cascade in rat myocarditis model: a novel mechanism with clinical implications <i>Boyoung Joung (Department of Internal Medicine, Yonsei University College of Medicine)</i>	
Localized signaling regulation of cardiac ion channels through progesterone receptor <i>Junko Kurokawa (Department of Bio-Informational Pharmacology, School of Pharmaceutical Sciences, University of Shizuoka, Japan)</i>	
The molecular nature of a calcium spark <i>Shi-Qiang Wang (State Key Laboratory of Membrane Biology, College of Life Sciences, Peking University, China)</i>	
Symposium 5: Learning & Memory	Chair: 장성호 (서울의대)
Neural firing patterns in the hippocampal formation in visual contextual environment <i>Inah Lee (Department of Brain and Cognitive Science, Seoul National University)</i>	
Neuron-specific nucleosome remodeling factor critical for emotional memory consolidation <i>Jin-Hee Han (Department of Biological Sciences, KAIST Institute for the BioCentury)</i>	
Layer-specific neuromodulation of long-term synaptic plasticity in the visual cortex <i>Duck-Joo Rhie (Department of Physiology, College of Medicine, The Catholic University of Korea)</i>	
Metaplasticity in the lateral habenula of depressed brains <i>ChiHye Chung (Department of Biological Sciences, Konkuk University)</i>	

Symposium 6: Mitochondria Physiology	Chair: 박규상 (연세원주의대)
Improvement of mitochondrial function induced by bio-active fabrics and alternative motor effects <i>Jae-Hong Ko (Department of Physiology, College of Medicine, Chung-Ang University)</i>	
Impact of mitochondrial stress in POMC neurons on systemic metabolism <i>Min-Seon Kim (Division of Endocrinology and Metabolism, Asan Medical Center and University of Ulsan College of Medicine)</i>	
Regulation of insulin secretion by glucose and its blunting in diabetes through glucotoxicity <i>Claes B. Wolheim (University Medical Center, Geneva)</i>	
Calcineurin as a modulator of mitophagy in pancreatic beta cells <i>Myungshik Lee (Severance Biomedical Science Institute and the Dept. of internal Medicine Yonsei University College of Medicine)</i>	
Mitochondrial chaperone HSP-60 enhances anti-bacterial immunity through up-regulating p38 MAP kinase signaling <i>Seung-Jae V. Lee (Department of Life Sciences, School of Interdisciplinary Bioscience and Bioengineering, and Information Technology Convergence Engineering, Pohang University of Science and Technology)</i>	
The critical roles of zinc in the regulation of mitochondrial oxidative stress <i>Sung-Ryul Lee (Department of Integrated Biomedical Science, Department of Physiology, Cardiovascular and Metabolic Disease Center, College of Medicine, Inje University)</i>	
Symposium 7: Vascular Physiology	Chair: 최수경 (연세의대), 김성준 (서울의대)
Contribution of AT1R mechanoactivation to the arterial myogenic response and its regulation by RGS5 protein in skeletal muscle arterioles <i>Michael Hill (University of Missouri-Columbia, USA)</i>	
Role of Kv7 channel in vasoreactivity of various blood vessels <i>Sewon Lee (Incheon National University)</i>	
Ancient signaling revisited: Crosstalk between reactive oxygen species and calcium in vascular smooth muscle angiotensin II signaling <i>Moo-Yeol Lee (Dongguk University)</i>	
Stimulation of autophagy improves vascular function in the mesenteric arteries of type 2 diabetic mice <i>Soo-Kyoung Choi (Yonsei University)</i>	
Physiological roles of ion channels and eNOS expressed in pulmonary artery smooth muscle <i>Sung Joon Kim (Seoul National University)</i>	

► Symposium (11월 4일 토요일)

Contents	
Symposium 8: KSEP/IMPACT Symposium	Chair: 한 진 (인제대), 광효범 (인하대)
Molecular evidence for “exercise as mitochondrial medicine”	David A. Hood (York University, Canada)
17 β -estradiol directly lowers mitochondrial membrane microviscosity and improves bioenergetic function in skeletal muscle	P. Darrell Neufer (East Carolina University, USA)
Effects of inflammation on myogenic differentiation: Role of myokines and secretory vesicles	Ju-Hee Kang (Department of Pharmacology, Inha University, Korea)
Exercise, SIRT1, and mitochondrial biogenesis in vascular homeostasis	Ji-Seok Kim (Gyeongsang National University)
Symposium 9: Chemical Senses	Chair: 문석준 (연세치대)
Molecular mechanism of <i>Drosophila</i> taste receptors	Yong Taek Jeong (Yonsei University College of Dentistry)
The chemosensory GPCR SRI-14 are required for concentration-dependent odor preference in <i>C. elegans</i>	Kyuhyung Kim (DGIST)
Mood, memory and oral sensory input	Jeong Won Jahng (Seoul National University School of Dentistry)
Microfluidics-on-a-tongue imaging chamber for functional screening of taste cells in vivo	Myunghwan Choi (Department of Biomedical Engineering, Sungkyunkwan University)
Symposium 10: Recent Biomedical Approaches in the Outside	Chair: 이은희 (가톨릭의대)
A regulatory mechanism for tumor malignancy through a Zinc-finger protein 143	Hye Jin You (Department of Cancer Biomedical Science, NCC-GCSP, National Cancer Center, Korea)
Development of stem cell therapy	Soon-Jae Kwon (R&D Center MEDIPOST Co., Ltd.)
Protein shelled nanoparticle (PSNP) synthesis and its applications	Sang Hyun Moh (BIO-FD&C Co., Ltd)
Novel effects of extrinsic factors on skin homeostasis	Dong Wook Shin (Basic Innovation Research Institute, Amorepacific Corporation R&D Center)
Symposium 11-1: KSEP/IMPACT Symposium	Chair: 김창근 (한체대), 김양하 (이화여대)
Resolution of RAGE-mediated inflammation via aerobic exercise: acute and chronic effects	Jacob M. Haus (University of Illinois at Chicago, USA)
Physical activity differences in different symptoms among Korean population	Hee Jeong Jin (Korea Institute of Oriental Medicine)
Effect of muscle fatigue by neuromuscular electrical stimulation on ankle dorsiflexion, leaning backward and leaning forward	Sang Hun Lee (Korea Institute of Oriental Medicine)
Can neuroimaging be a plausible technique for qigong rehabilitation research?	Kyungmo Park (Kyunghee University)
Symposium 11-2: KSEP/IMPACT Symposium	Chair: 김기진 (계명대), 강현식 (성균관대)
Functional changes in the skeletal muscle fibers with aging and exercise	Jong Hee Kim (Hanyang University)
Neuro-muscular junction and exercise	Jae Sung Park (Kongju National University)
Muscle over mind	Hyo Youl Moon (Seoul National University)
Is ursolic acid an exercise mimetics?	Sang Hyun Kim (Chonbuk National University)

Symposium 12: Functional Food		Chair: 김선희 (전북의대), 진영호(경희의대)
Development of functional food for improving sperm motility		Hye Kyung Kim (Kyungsoong University)
Nitrate-nitrite-nitric oxide pathway: the missing link in the management of blood pressure		Hyun-Ock Pae (Wonkwang University School of Medicine)
<i>In vivo</i> nitric oxide measurements using an electrochemical microelectrode in a rat model		Jae Ho Shin (Kwangwoon University)
Potential protective effects of fermented garlic extract against myocardial ischemia-reperfusion injury		Gi-Ja Lee (Kyung Hee University)
Rice bran promotes non-rapid eye movement sleep through histamine type 1 receptors		Young Ho Jin (Kyung Hee University)
Symposium 13: Current Status of Research on Novel Tissue, Primo Vascular System		Chair: 류판동 (서울수의대)
Historical review on the primo vascular system		Kwang-Sup Soh (Seoul National University)
HAR-NDS (hyaluronic acid-rich node and duct system): stem cells and innate immunity		Byoung S. Kwon (Eutilex, Co., Ltd., and Tulane University)
A review on primo vascular system research in the U.S.		Kyung Aih Kang (University of Louisville, Louisville, Kentucky)
Plasticity of organ surface primo vascular system tissue in heart failure		Pan-Dong Ryu (Seoul National University)
Expression of genes in primo vasculature floating lymphatic endothelium under lipopolysaccharide		Sang Suk Lee (Sangji University)

Plenary Lecture

- S 31** Memory, circuits, and cognitive failure in Alzheimer's disease
Paul Worley
Department of Neuroscience, Johns Hopkins University School of Medicine, USA

Symposium

Symposium 1: TRP Channel

- S 32** S-I-1 Dual action of the $G_{q\alpha}$ -PLC β -PI(4,5)P $_2$ pathway on TRPC1/4 and TRPC1/5 heterotetramers
Jongyun Myeong¹, Juyeon Ko¹, Misun Kwak¹, Kodaji Ha¹, Chansik Hong², Dongki Yang³, Hyun Jin Kim^{4*}, Ju-Hong Jeon¹, Insuk So^{1*}
¹Department of Physiology, Seoul National University College of Medicine, ²Department of Physiology, Chosun University School of Medicine, ³Department of Physiology, College of Medicine, Gachon University, ⁴Department of Physiology, Sungkyunkwan University School of Medicine, Korea
- S 32** S-I-2 Functional role of coiled coil domain in the gating of TRPC3/6
Kyu Pil Lee
Department of Physiology, Chungnam National University, Daejeon, Korea
- S 32** S-I-3 Renoprotection of Klotho through TRPC6 downregulation
Ji-Hee Kim, Kyu-Hee Hwang, Hung Minh Tran, Kyu-Sang Park, Seung-Kuy Cha
Departments of Physiology and Global Medical Science, Institute of Lifestyle Medicine and Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Wonju, Gangwon-do, Korea
- S 32** S-I-4 Role of Trp channels in the control of feeding behavior and metabolism
Jong-Woo Sohn
Department of Biological Sciences, KAIST
- S 32** S-I-5 Ca²⁺ signaling in primary cilia during development and disease
Markus Delling
Physiology, UCSF School of Medicine
- S 33** S-I-6 Oral barrier formation via temperature-sensitive TRP channels
Mizuho A. Kido
Department of Anatomy and Physiology, Faculty of Medicine, Saga University
- S 33** S-I-7 The hypothalamic TRPV1 channels in regulation of food intake
Dong Kun Lee
Department of Physiology, Institute of Health Sciences, Gyeongsang National University School of Medicine, Korea
- S 33** S-I-8 Acceleration of skin barrier restoration by topical botanical products via transient receptor potential V3
Joo Hyun Nam
Department of Physiology, Dongguk University College of Medicine
- S 33** S-I-9 The intracellular Ca²⁺ channel TRPML3 is a PtdIns3P effector that regulates early autophagosome biogenesis
So Woon Kim¹, Mi Kyung Kim¹, Kyoung Sun Park², Hyun Jin Kim¹
¹Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, ²Wide River Institute of Immunology, Seoul National University College of Medicine, Gangwon-do, Korea
- S 34** S-I-10 The ER/PM microdomain, PI(4,5)P $_2$ and the regulation of STIM1-Orai1 channel function
Seok Choi
Department of Physiology, College of Medicine, Chosun University

Symposium 2: Physiology of Neuropsychiatric Disease

- S 34** S-II-1 Reduction of microRNA targeting Drd2 leads to thalamocortical dysfunction in schizophrenia mouse models
Sungkun Chun
Department of Physiology, Chonbuk National University Medical School
- S 34** S-II-2 Synapse organization by autism-associated synaptic adhesion molecules
Jaewon Ko
Department of Cognitive and Brain Sciences, Daegu Gyeonbuk Institute of Science and Technology (DGIST), Daegu, Korea
- S 35** S-II-3 Excessive dopamine receptor activation in the dorsal striatum promotes autistic-like behaviors
Pyung-Lim Han
Departments of Brain and Cognitive Sciences, Ewha Womans University
- S 35** S-II-4 Critical role of NMDA receptor function on the modulation of behavioral deficits in animal models of autism spectrum disorder
Chan Young Shin
School of Medicine, Konkuk University, Seoul, Korea

Symposium 3: Inflammation and Pathophysiological Signaling

- S 36** S-III-1 Identification of Sirtuin 6 as a novel target in macrophage switch and inflammation
Byung-Hyun Park
Department of Biochemistry and Metaflammation Research Center, Chonbuk National University Medical School
- S 36** S-III-2 SREBP-1 links lipogenesis to macrophage phagocytosis via mTOR signaling
Seung-Soon Im
Department of Physiology, Keimyung University School of Medicine, Daegu, Korea
- S 36** S-III-3 Effect of necrotic cell microenvironment on glioma progression
Youn-Hee Choi
Department of Physiology, Ewha Womans University School of Medicine, Seoul, Korea
- S 36** S-III-4 Programming of macrophages by apoptotic cancer cells inhibits cancer progression and metastasis
Jihee Lee
Department of Physiology and Tissue Injury Defense Research Center, College of Medicine, Ewha Womans University, Seoul, Korea

Symposium 4: Cardiac Physiology and Arrhythmia

- S 37** S-IV-1 Modulation of autonomic nerve system and cardiac arrhythmia
Eue-Keun Choi
Department of Internal Medicine, Seoul National University Hospital
- S 37** S-IV-2 Sympathetic nerve blocks promote anti-inflammatory response by activating JAK2-STAT3-mediated signaling cascade in rat myocarditis model: a novel mechanism with clinical implications
Boyoung Joung
Division of Cardiology, Yonsei University College of Medicine, Seoul, Korea
- S 37** S-IV-3 Localized signaling regulation of cardiac ion channels through progesterone receptor
Junko Kurokawa
Department of Bio-Informational Pharmacology, School of Pharmaceutical Sciences, University of Shizuoka
- S 37** S-IV-4 The molecular nature of a calcium spark
Shi-Qiang Wang
State Key Laboratory of Membrane Biology, College of Life Sciences, Peking University, Beijing, China

Symposium 5: Learning & Memory

- S 38** S-V-1 Neural firing patterns in the hippocampal formation in visual contextual environment
Inah Lee
Department of Brain and Cognitive Science, Seoul National University
- S 38** S-V-2 Neuron-specific nucleosome remodeling factor critical for emotional memory consolidation
Jin-Hee Han
Department of Biological Sciences, KAIST Institute for the BioCentury (KIB), KAIST
- S 39** S-V-3 Layer-specific neuromodulation of long-term synaptic plasticity in the visual cortex
Duck-Joo Rhie, Hyun-Jong Jang, Kwang-Hyun Cho
Department of Physiology, Catholic Neuroscience Institute, College of Medicine, The Catholic University of Korea, Seoul, Korea
- S 39** S-V-4 Metaplasticity in the lateral habenula of depressed brains
ChiHye Chung
Department of Biological Sciences, Konkuk University

Symposium 6: Mitochondria Physiology

- S 39** S-VI-1 Improvement of mitochondrial function induced by bio-active fabrics and alternative motor effects
Jae-Hong Ko
Department of Physiology, College of Medicine, Chung-Ang University
- S 39** S-VI-2 Impact of mitochondrial stress in POMC neurons on systemic metabolism
Min-Seon Kim
Division of Endocrinology and Metabolism, Asan Medical Center and University of Ulsan College of Medicine, Seoul, Korea
- S 40** S-VI-3 Regulation of insulin secretion by glucose and its blunting in diabetes through glucotoxicity
Claes B. Wollheim
Department Cell Physiology and Metabolism, University Medical Center, Switzerland and Lund University Diabetes Center, Malmö, Sweden
- S 40** S-VI-4 Calcineurin as a modulator of mitophagy in pancreatic beta cells
Kihyoun Park^{1,2}, Heyjin Lim^{1,2}, Myung-shik Lee²
¹Department of Health Sciences and Technology, SAIHST, Sungkyunkwan University, Seoul, ²Severance Biomedical Science Institute and the Department of Internal Medicine Yonsei University College of Medicine, Seoul, Korea

- S 40 S-VI-5** Mitochondrial chaperone HSP-60 enhances anti-bacterial immunity through up-regulating p38 MAP kinase signaling
Dae-Eun Jeong¹, Dongyeop Lee¹, Sun-Young Hwang¹, Yujin Lee¹, Jee-Eun Lee¹, Mihwa Seo², Woosoon Hwang¹, Keunhee Seo¹, Ara B. Hwang¹, Murat Artan³, Heehwa G. Son¹, Jay-Hyun Jo¹, Haeshim Baek¹, Young Min Oh¹, Youngjae Ryu⁴, Hyung-Jun Kim⁴, Chang Man Ha⁴, Joo-Yeon Yoo¹, Seung-Jae V. Lee^{1,2,3}
¹Department of Life Sciences, ²School of Interdisciplinary Bioscience and Bioengineering, and ³Information Technology Convergence Engineering, Pohang University of Science and Technology, Pohang, Gyeongbuk, ⁴Research Division, Korea Brain Research Institute, Daegu, Korea
- S 40 S-VI-6** The critical roles of zinc in the regulation of mitochondrial oxidative stress
Sung Ryul Lee¹, Jin Han²
¹Department of Integrated Biomedical Science, ²Department of Physiology, Cardiovascular and Metabolic Disease Center, College of Medicine, Inje University

Symposium 7: Vascular Physiology

- S 41 S-VII-1** Contribution of AT1R mechanoactivation to the arterial myogenic response and its regulation by RGS5 protein in skeletal muscle arterioles
Michael A. Hill, Kwangseok Hong, Gerald A. Meininger
Dalton Cardiovascular Research Center and Department of Medical Pharmacology and Physiology, University of Missouri-Columbia, MO 65211, USA
- S 41 S-VII-2** Role of Kv7 channel in vasoreactivity of various blood vessels
Sewon Lee^{1,2}, Yan Yang², Miles A. Tanner², Min Li², Michael A. Hill²
¹Division of Sport Science & Sport Science Institute, Incheon National University, Incheon, Korea, ²Dalton Cardiovascular Research Center and Department of Medical Pharmacology & Physiology, University of Missouri-Columbia, MO, USA
- S 42 S-VII-3** Ancient signaling revisited: Crosstalk between reactive oxygen species and calcium in vascular smooth muscle angiotensin II signaling
Moo-Yeol Lee
College of Pharmacy, Dongguk University, Goyang, Gyeonggi-do, Korea
- S 42 S-VII-4** Stimulation of autophagy improves vascular function in the mesenteric arteries of type 2 diabetic mice
Youngin Kwon, Seonhee Byeon, Soo-Kyoung Choi
Department of Physiology, College of Medicine, Brain Korea 21 Plus Project for Medical Sciences, Yonsei University, Seoul, Korea
- S 42 S-VII-5** Physiological roles of ion channels and eNOS expressed in pulmonary artery smooth muscle
Sung Joon Kim^{1,2}
¹Department of Physiology, ²Hypoxic/Ischemic Disease Institute, Seoul National University College of Medicine

Symposium 8: KSEP/IMPACT Symposium

- S 43 S-VIII-1** Molecular evidence for “exercise as mitochondrial medicine”
D. A. Hood, J. M. Memme
Muscle Health Research Centre, School of Kinesiology and Health Science, York University, Toronto, Canada
- S 43 S-VIII-2** 17 β -estradiol directly lowers mitochondrial membrane microviscosity and improves bioenergetic function in skeletal muscle
Maria J. Torres^{1,2}, Kim A. Kew³, Terence E. Ryan^{1,4}, Edward Ross Pennington^{1,5}, Chien-Te Lin^{1,4}, Katherine A. Buddo³, Amy M. Fix¹, Cheryl A. Smith^{1,4}, Laura A. Gilliam^{1,4}, Sira Karvinen⁶, Dawn A. Lowe⁶, Espen E. Spangenburg^{1,4}, Tonya N. Zeczycki^{1,5}, Saame Raza Shaikh^{1,5}, P. Darrell Neuffer^{1,2,4}
¹East Carolina Diabetes and Obesity Research Institute, ²Department of Kinesiology, ³Department of Chemistry, ⁴Department of Physiology, ⁵Department of Biochemistry & Molecular Biology, East Carolina University, Greenville, NC 27834, USA, ⁶Department of Rehabilitation Medicine, Medical School, University of Minnesota, Minneapolis, MN 55455, USA
- S 44 S-VIII-3** Effects of inflammation on myogenic differentiation: Role of myokines and secretory vesicles
Ju-Hee Kang^{1,2}, Sujin Kim^{2,3}, Hyo Bum Kwak³, Dong-Ho Park³
¹Department of Pharmacology, College of Medicine, ²Hypoxia-related Disease Research Center, ³Department of Kinesiology, Inha University
- S 44 S-VIII-4** Exercise, SIRT1, and mitochondrial biogenesis in vascular homeostasis
Ji-Seok Kim
GNU Exe-Physio Lab., Department of Physical Education, College of Education, Gyeongsang National University, Jinju, Korea

Symposium 9: Chemical Senses

- S 45 S-IX-1** Molecular mechanism of *Drosophila* taste receptors
Yong Taek Jeong, Seok Jun Moon
Department of Oral Biology, Yonsei University College of Dentistry
- S 45 S-IX-2** The chemosensory GPCR SRI-14 are required for concentration-dependent odor preference in *C. elegans*
Kyuhyung Kim
Department of Brain & Cognitive Sciences, DGIST, Daegu, Korea

- S 45 S-IX-3 Mood, memory and oral sensory input
Jeong Won Jahng
Dental Research Institute, Seoul National University School of Dentistry, Seoul, Korea
- S 45 S-IX-4 Microfluidics-on-a-tongue imaging chamber for functional screening of taste cells in vivo
Jisoo Han, Myunghwan Choi
Department of Biomedical Engineering, Sungkyunkwan University

Symposium 10: Recent Biomedical Approaches in the Outside

- S 46 S-X-1 A regulatory mechanism for tumor malignancy through a Zinc-finger protein 143
Hye Jin You
Translational Research Branch, Research Institute, Department of Cancer Biomedical Science, NCC-GCSP, National Cancer Center, Korea
- S 46 S-X-2 Development of stem cell therapy
Soon-Jae Kwon
R&D Center MEDIPOST Co., Ltd.
- S 46 S-X-3 Protein shelled nanoparticle (PSNP) synthesis and its applications
Sang Hyun Moh
BIO-FD&C Co., Ltd)
- S 46 S-X-4 Novel effects of extrinsic factors on skin homeostasis
Dong Wook Shin
Basic Science & Innovation Division, Amorepacific Corporation R&D Center

Symposium 11-1: KSEP/IMPACT Symposium

- S 47 S-XI-1-5 Resolution of RAGE-mediated inflammation via aerobic exercise: acute and chronic effects
Jacob Haus
Kinesiology and Nutrition, University of Illinois at Chicago
- S 47 S-XI-1-6 Physical activity differences in different symptoms among Korean population
HeeJeong Jin, Ki Hyun Park, Sang-Hyuk Kim, HoSeock Kim, Siwoo Lee
Korean Institute of Oriental Medicine, Daejeon, Korea
- S 47 S-XI-1-7 Effect of muscle fatigue by neuromuscular electrical stimulation on ankle dorsiflexion, leaning backward and leaning forward
Hyun Kyoon Lim¹, Sungha Kim², Eun Kyug Bae², Sujeong Mun², Bongyoung Ahn¹, Donghyun Lee^{1,3,4}, Sanghun Lee^{2*}
¹Center for Medical Metrology KRISS, ²Korean Medicine Fundamental Research Division, KIOM, ³Department of Biomedical Engineering, Konyang University
- S 47 S-XI-1-8 Can neuroimaging be a plausible technique for qigong rehabilitation research?
Kyungmo Park
Department of Biomedical Engineering, Kyung Hee University, Yongin, Korea

Symposium 11-2: KSEP/IMPACT Symposium

- S 48 S-XI-2-9 Functional changes in the skeletal muscle fibers with aging and exercise
Jong-Hee Kim^{*}
Department of Physical Education, Hanyang University
- S 48 S-XI-2-10 Neuro-muscular junction and exercise
Jae-sung Park
Department of Physical Education, Kongju National University College of Education
- S 48 S-XI-2-11 Muscle over mind
Hyo Youl Moon
Institute of Sport Science, Seoul National University, Seoul, Korea
- S 49 S-XI-2-12 Is ursolic acid an exercise mimetics?
Sang Hyun Kim
Chonbuk National University, Korea

Symposium 12: Functional Food

- S 50 S-XII-1 Development of functional food for improving sperm motility
Hye Kyung Kim
College of Pharmacy, Kyungsung University, Busan, Department of Urology, Medical School, Chonbuk National University, Jeonju, Korea
- S 50 S-XII-2 Nitrate-nitrite-nitric oxide pathway: the missing link in the management of blood pressure
Hyun-Ock Pae
Wonkwang University School of Medicine, Iksan, Korea

- S 50** S-XII-3 *In vivo* nitric oxide measurements using an electrochemical microelectrode in a rat model
Jae Ho Shin¹, Ji-Ja Lee²
¹Department of Chemistry, College of Natural Science, Kwangwoon University, ²Department of Biomedical Engineering, College of Medicine, Kyung Hee University
- S 50** S-XII-4 Potential protective effects of fermented garlic extract against myocardial ischemia-reperfusion injury
Gi-Ja Lee¹, Young Ju Lee¹, Doyeon Lee¹, So Min Shin², Jin Sun Lee², Hyun Soo Chun³, Jae Ho Shin²
¹Department of Biomedical Engineering, College of Medicine, Kyung Hee University, ²Department of Chemistry, College of Natural Science, Kwangwoon University, ³Department of National Cosmetics Science, Sunchon National University
- S 51** S-XII-5 Rice bran promotes non-rapid eye movement sleep through histamine type 1 receptors
Eunhee Yang, Sojin Kim, Young-Ho Jin
Department of Physiology, College of Medicine, Kyung Hee University, Seoul, Korea

Symposium 13: Current Status of Research on Novel Tissue, Primo Vascular System

- S 51** S-XIII-1 Historical review on the primo vascular system
Kwang-Sup Soh
Department of Physics and Astronomy, Seoul National University
- S 51** S-XIII-2 HAR-NDS (hyaluronic acid-rich node and duct system): stem cells and innate immunity
Seung J. Lee¹, Beom K. Choi², Byoung S. Kwon^{1,3}
¹Eutilex, ²National Cancer Center and ³Tulane University
- S 52** S-XIII-3 A review on primo vascular system research in the U.S.
Kyung Aih Kang
University of Louisville, Louisville, Kentucky, Auburn University, Auburn, Alabama, USA
- S 52** S-XIII-4 Plasticity of organ surface primo vascular system tissue in heart failure
Chae Jeong Lim, Yiming Shen, So Yeong Lee, Pan Dong Ryu
Department of Veterinary Pharmacology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, Korea
- S 52** S-XIII-5 Expression of genes in primo vasculature floating lymphatic endothelium under lipopolysaccharide
Ji Yoon Lee¹, Jun Young Shin², Su Hee Kim², Da Woon Choi², Sang Heon Choi², Jong Ok Ji³, Jong Gu Choi², Min Suk Rho², Sang Suk Lee²
¹Department of Biomedical Laboratory Science, ²Department of Oriental Biomedical Engineering, ³Department of Oriental-Western Biomedical Engineering and Goodpl Inc., Sangji University

Poster Oral Presentation

- PO-A-01 (P1-02)** Novel KCNQ4 mutations in Korean patients with nonsyndromic hearing loss
Hyun Been Choi^{1*}, Jinsei Jung^{2*}, Young Ik Koh^{3*}, Joon Suk Lee³, Seyoung Yu³, Sung Huhn Kim², Jae Hyun Jae², Jieun An¹, Ami Kim¹, Heon Yung Gee², Jae Young Choi², Tong Mook Kang¹
¹Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Suwon, ²Department of Otorhinolaryngology, Brain Korea 21 PLUS Project for Medical Sciences, Yonsei University College of Medicine, Seoul, ³Department of Pharmacology, Brain Korea 21 PLUS Project for Medical Sciences, Yonsei University College of Medicine, Seoul, Korea
- PO-A-02 (P1-04)** PRMT7 regulates neuronal excitability via modulation of NALCN activity
Xianlan Wen¹, Tuan Anh Vuong², Hyunsu Kang¹, Jong-Sun Kang², Hana Cho¹
¹Department of Physiology, and ²Molecular and Cellular Biology, Samsung Biomedical Research Institute, Sungkyunkwan University School of Medicine, Suwon, Korea
- PO-A-03 (P3-02)** Peripheral GABA_A receptor-mediated signals facilitate chronic inflammatory pain
Pa Reum Lee¹, Seo-Yeon Yoon^{1,2}, Yong Ho Kim³, Seog Bae Oh^{1,2}
¹Department of Brain and Cognitive Sci., Col. of Natural Sci., Seoul Natl. Univ., Seoul, ²Dent. Res. Inst. and Department of Neurobio. & Physiology, School of Dentistry, Seoul Natl. Univ., Seoul, ³Department of Physiology, Col. of Medicine, Gachon Univ., Incheon, Korea
- PO-A-04 (P3-03)** SHP2 mutation mediated cell type specific dysregulation of Ras-Erk signaling pathway
Hyun-Hee Ryu^{1,2†}, Tae-Hyun Kim^{3†}, Minkyung Kang^{1,4}, DaeHee Han³, Yong Gyu Kim^{1,4}, Jiyeon Ha¹, Chae-Seok Lim³, Chul-Hong Kim², Sang Jeong Kim^{1,4,6}, Alcino J. Silva⁵, Jung-Woong Kim^{2*}, Bong-Kiun Kaang^{3*}, Yong-Seok Lee^{1,4,6*}
¹Department of Physiology, Seoul National University College of Medicine, ²Department of Life Science, Chung-Ang University, ³School of Biological Sciences, College of Natural Sciences, Seoul National University, ⁴Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea, ⁵Department of Neurobiology, Integrative Center for Learning and Memory, Brain Research Institute, University of California Los Angeles, California, USA, ⁶Neuroscience Research Institute, Seoul National University College of Medicine, Seoul, Korea
- PO-A-05 (P3-04)** Climbing fiber burst-mediated sensory coding is directly represented in post-synaptic Purkinje cell
Seung-Eon Roh^{1,3*}, Seung Ha Kim^{1,2}, Yong-Gyu Kim¹, Chang-Hyun Ryu¹, Chang-Eop Kim¹, Sun Kwang Kim³, Sang Jeong Kim^{1,2}
¹Department of Physiology and ²Department of Biomedical Science, College of Medicine, Seoul National University, ³Department of Physiology, College of Korean Medicine, Kyung Hee University, Seoul, Korea

- PO-A-06 (P3-05) Channel-mediated GABA release from reactive astrocytes in epileptic hippocampus
Chiranjivi Neupane¹, Sudip Pandit¹, Ramesh Sarma¹, Junsung Woo², C Justin Lee², Jin Bong Park¹
¹Department of Physiology, School of Medicine and Brain Research Institute, Chungnam National University, Daejeon, ²Center for Neural Science, Korea Institute of Science and Technology (KIST), Seoul, Korea
- PO-A-07 (P4-02) The E3 ligase c-Cbl inhibits cancer cell migration by neddylation of the proto-oncogene c-Src
Gun-Woo Lee¹, Jun Bum Park¹, Sung Yeon Park^{2,3}, Seo Jieun¹, Seung-Hyun Shin¹, Jong-Wan Park^{1,2}, Sang Jung Kim^{1,2,3}, Masatoshi Watanabe⁴, Yang-Sook Chun^{1,2,3*}
¹Department of Biomedical Science, ²Ischemic/Hypoxic Disease Institute, ³Department of Physiology, Seoul National University College of Medicine, Seoul, ⁴Laboratory for Medical Engineering, Graduate School of Engineering, Yokohama National University
- PO-B-01 (P2-03) STIM2 and STIM1 have similarities and differences, but both regulate Ca²⁺ movement in skeletal muscle
Mi Ri Oh¹, Keon Jin Lee¹, Mei Huang¹, Jin Ock Kim², Do Han Kim², Chung-Hyun Cho³, Eun Hui Lee¹
¹Department of Physiology, College of Medicine, The Catholic University of Korea, Seoul, ²School of Life Sciences, GIST, Gwangju, ³Department of Pharmacology, College of Medicine, Seoul National University, Seoul, Korea
- PO-B-02 (P1-01) Calcium-sensing receptor is a critical mediator of chemotaxis and chemokinesis in immune cells
Fengjiao Chang, Jin Man Kim, Kyungpyo Park
Department of Physiology, School of Dentistry, Seoul National University and Dental Research Institute, Seoul, Korea
- PO-B-03 (P1-03) Molecular mechanism of voltage-gated Ca²⁺ channel regulation by membrane PIP₂
Cheon-Gyu Park, Byung-Chang Suh*
Department of Brain & Cognitive Sciences, DGIST, Daegu, Korea
- PO-B-04 (P4-01) WNK1-mediated Ca²⁺ signaling is a novel culprit for hepatic stellate cell activation and fibrosis
Kyu-Hee Hwang¹⁻⁴, Ji-Hee Kim^{1,3,4}, Soo-Jin Kim¹⁻⁴, Hung Minh Tran¹⁻⁴, In Deok Kong¹⁻³, Kyu-Sang Park¹⁻⁴, Seung-Kuy Cha^{1-4*}
Departments of ¹Physiology and ²Global Medical Science, ³Institute of Lifestyle Medicine, and ⁴Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Wonju, Gangwon-do, Korea
- PO-B-05 (P2-01) Higher vulnerability of catecholamine-induced arrhythmia in isolated right atrial myocytes
Ami Kim, Jieun An, Hyun Bin Choi, Tong Mook Kang
Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Suwon, Korea
- PO-B-06 (P3-06) Singular mechanisms of the thermal sweating to central sudomotor in tropical Africans
Jeong-Beom Lee^{1*}, Young-Ki Min¹, Jeong-Ho Kim², Yun Su Eun², Jin Wook Kim², Seo Yun Jung², Suk Min Han², Jae Yeong Bae², Hee-Jin Lee³, Mi-Young Lee³
¹Department of Physiology, College of Medicine, Soonchunhyang University, Cheonan, ²A Student at the College of Medicine, Soonchunhyang University, Cheonan, ³Global Graduate School of Healthcare, Soonchunhyang University, Asan, Korea
- PO-B-07 (P7-01) Mesothelial cells demarcate the subunits of organ surface primo vascular tissue
Chae Jeong Lim¹, Yeo Sung Yoon², So Yeong Lee¹, Pan Dong Ryu¹
Departments of ¹Veterinary Pharmacology and ²Anatomy & Cell Biology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, Korea

Poster Presentation

P1: Ion Channels

- S 53 P1-01 (PO-B-02) Calcium-sensing receptor is a critical mediator of chemotaxis and chemokinesis in immune cells
Fengjiao Chang, Jin Man Kim, Kyungpyo Park
Department of Physiology, School of Dentistry, Seoul National University and Dental Research Institute, Seoul, Korea
- S 53 P1-02 (PO-A-01) Novel KCNQ4 mutations in Korean patients with nonsyndromic hearing loss
Hyun Been Choi^{1*}, Jinsei Jung^{2*}, Young Ik Koh^{3*}, Joon Suk Lee³, Seyoung Yu³, Sung Huhn Kim², Jae Hyun Jae², Jieun An¹, Ami Kim¹, Heon Yung Gee³, Jae Young Choi², Tong Mook Kang¹
¹Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Suwon, ²Department of Otorhinolaryngology, Brain Korea 21 PLUS Project for Medical Sciences, Yonsei University College of Medicine, Seoul, ³Department of Pharmacology, Brain Korea 21 PLUS Project for Medical Sciences, Yonsei University College of Medicine, Seoul, Korea
- S 54 P1-03 (PO-B-03) Molecular mechanism of voltage-gated Ca²⁺ channel regulation by membrane PIP₂
Cheon-Gyu Park, Byung-Chang Suh*
Department of Brain & Cognitive Sciences, DGIST, Daegu, Korea
- S 54 P1-04 (PO-A-02) PRMT7 regulates neuronal excitability via modulation of NALCN activity
Xianlan Wen¹, Tuan Anh Vuong², Hyunsu Kang¹, Jong-Sun Kang², Hana Cho¹
¹Department of Physiology, and ²Molecular and Cellular Biology, Samsung Biomedical Research Institute, Sungkyunkwan University School of Medicine, Suwon, Korea
- S 54 P1-05 Regulation of spontaneous glutamate release by presynaptic M-type K⁺ channels in the hippocampal pyramidal neurons
Byoung Ju Lee, Jae-Han Kwon, Suk-Ho Lee, Won-Kyung Ho
Cell Physiology Laboratory Department of Physiology, bioMembrane Plasticity Research Center, Seoul National University College of Medicine

- S 54** P1-06 Altered Na⁺ and Cl⁻ transporting activity and dysregulated pH homeostasis in hyperkalemic db/db cardiac arrest
Minjeong Ji, Wanhee Suk, Kuk Hui Son, Jeong Hee Hong*
Department of Physiology, College of Medicine, Gachon University
- S 55** P1-07 Modulation of mesenchymal stem cell tropism through the recruitment and enhanced activity of SLC4A7
Dongun Lee^{1,2}, Junyoung Park³, Dongwoo Khang³, Jeong Hee Hong¹
¹Gachon University, ²Lee Gil Ya Cancer and Diabetes Institute, ³Department of Physiology, College of Medicine, Gachon University
- S 55** P1-08 Gai-mediated TRPC4 activation by polycystin-1 contributes to the endothelial function via STAT1 activation
Misun Kwak^{1,2}, Chansik Hong³, Jongyun Myeong^{1,2}, Ju-Hong Jeon^{1,2}, Insuk So^{1,2}
¹Department of Physiology and Institute of Dermatological Science, ²Department of Biomedicines, Seoul National University College of Medicine, Seoul, ³Department of Physiology, School of Medicine, Chosun University, Gwangju, Korea
- S 55** P1-09 Regulation of TRPC4, TRPC5 homotetrameric and TRPC1/4, C1/5 heterotetrameric channel activity by PI(4,5)P₂ hydrolysis
Juyeon Ko, Jongyun Myeong, Insuk So
Department of Physiology, Seoul National University College of Medicine, Seoul, Korea
- S 55** P1-10 Restored activity of HCO₃⁻ transporters by knockdown of spinophilin enhance invasive function of lung cancer cells
Soyoung Hwang, Kuk Hui Son, Jeong Hee Hong
Department of Physiology, Gachon University College of Medicine, Incheon
- S 56** P1-11 Dapoxetine, a selective serotonin reuptake inhibitor inhibits voltage-gated K⁺ channels in coronary arterial smooth muscle cells from rabbit
Jin Ryeol An¹, Won Sun Park¹, Sung Hun Na²
¹Department of Physiology, Kangwon National University School of Medicine, Chuncheon, ²Department of Obstetrics and Gynecology, Kangwon National University Hospital, Kangwon National University School of Medicine, Chuncheon, Korea
- S 56** P1-12 Anti-diabetic drug nateglinide induces vasodilation via activation of voltage-dependent K⁺ channels in aortic smooth muscle
Hongliang Li¹, Sung Hun Na², Won Sun Park¹
¹Department of Physiology, Kangwon National University School of Medicine, Chuncheon, ²Department of Obstetrics and Gynecology, Kangwon National University Hospital, Kangwon National University School of Medicine, Chuncheon, Korea
- S 56** P1-13 A tricyclic antidepressant, nortriptyline inhibits the voltage-dependent K⁺ channels in coronary arterial smooth muscle cells from rabbit
Sung Eun Shin¹, Won Sun Park¹, Sung Hun Na²
¹Department of Physiology, Kangwon National University School of Medicine, Chuncheon, ²Department of Obstetrics and Gynecology, Kangwon National University Hospital, Kangwon National University School of Medicine, Chuncheon, Korea
- S 56** P1-14 Salivary spinophilin tunes chloride/bicarbonate exchangers for the Cl⁻ secretion in salivary glands
Sang Ah Lee¹, Dongun Lee¹, Dong Min Shin³, Jeong Hee Hong¹, Kuk Hui Son²
¹Department of Physiology, College of Medicine, Gachon University, ²Department of Thoracic and Cardiovascular Surgery, Gachon University Gil Medical Center, Gachon University, ³Yonsei University School of Dentistry
- S 57** P1-15 GNB5 regulates TRPC3 and store-operated Ca²⁺ entry mediated bone remodeling
Namju Kang, Yu-Mi Yang, Dong Min Shin, Soonhong Park
Department of Oral Biology, BK21 PLUS project, Yonsei University College of Dentistry, Seoul, Korea
- S 57** P1-16 Real-time assessment of shear-induced ATP release from a rat atrial myocyte using sniffer-patch clamp
Min-Jeong Son, Joon-Chul Kim, Qui Anh Le, Kyoung Hee Kim, Sun-Hee Woo
College of Pharmacy, Chungnam National University, Daejeon, Korea
- S 57** P1-17 Temperature-dependent increase of the calcium sensitivity and activation kinetics of ANO6 Cl⁻ channel variants
Haiyue Lin¹, Joo Hyun Nam², Sung Joon Kim¹
¹Department of Physiology, Seoul National University College of Medicine, Seoul, ²Department of Physiology, Dongguk University College of Medicine, Gyeongju, Korea
- S 58** P1-18 Identification of critical amino acids in the C-terminal of TREK-2 K⁺ channel for ATP- and pH_i-sensitive regulation
Joohan Woo¹, Young Keul Jeon¹, Yin-Hua Zhang¹, Joo Hyun Nam², Dong Hoon Shin³, Sung Joon Kim¹
¹Department of physiology, College of Medicine, Seoul National University, Seoul, ²Department of physiology & Ion Channel Disease Research Center, College of Medicine, Dongguk University, Kyungju, ³Department of Pharmacology, College of Medicine, Yonsei University, Seoul, Korea
- S 58** P1-19 Anoctamin1 does not function as ion channel in head and neck squamous cell carcinoma due to lack of surface expression
Young Keul Jeon, Joo Han Woo, Ji Hyun Jang, Seong Woo Choi, Hai Yue Lin, Yin Ming Zhe, Sung Joon Kim
Department of Physiology, Seoul National University, College of Medicine
- S 58** P1-20 Carbonic anhydrase 12 E/K mutation modulates the function of AQP5 in submandibular glands
Min Jae Kim[†], Jung Yun Kang, Jeong Hee Hong, Dong Min Shin*
Department of Oral Biology, BK21 PLUS Project, Yonsei University College of Dentistry, Seoul, Korea

- S 58** P1-21 Augmentation of Ca^{2+} -induced Ca^{2+} release by chrysosplenol C via sensitization of Ca^{2+} release sites in ventricular myocytes
Joon-Chul Kim¹, Jun Wang¹, Bojjibabu Chidipi¹, Min-Jeong Son¹, Young Ho Kim¹, Nguyen Manh Cuong^{2,3}, Sun-Hee Woo¹
¹College of Pharmacy, IDRD, Chungnam National University, Daejeon, Korea, ²Institute of Chemistry, Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam, ³Institute of Natural Products Chemistry, VAST, Hanoi, Vietnam
- S 59** P1-22 De-energized mitochondrial function in permeabilized rat ventricle myocytes
Quynh Mai Ho, Jeong Hoon Lee, Duong Duc Pham, Ki Hwan Hong, Kim Sung Jin, Yeon Joo Jung, Ho Sun Lee, Chae Hun Leem
Department of Physiology, College of Medicine, Ulsan University, Seoul, Korea
- S 59** P1-23 The critical role of three charged residues in TRPC5 pore region in interaction with englerin A
SeungJoo Jeong¹, Minji Kim², Eunice Yon June Park¹, Jinhong Wie³, Ju-hong Jeon¹, Insuk So¹
¹Department of Physiology, Seoul National University College of Medicine, Seoul, ²Chungnam National University, College of Veterinary Medicine, Daejeon, Korea, ³Department of Biology, University of Pennsylvania, Philadelphia, Pennsylvania, USA
- S 59** P1-24 Identification of clustered phosphorylation sites in PKD2L1: how PKD2L1 channel activation is regulated by cAMP signaling pathway
Eunice Yon June Park¹, Misun Kwak¹, Kotdaji Ha², Insuk So^{1*}
¹Department of Physiology, Seoul National University, College of Medicine, Seoul, Korea, ²Department of Physiology, University of California, San Francisco, California, USA
- S 60** P1-25 TRPM7 mediates mechanosensitivity in adult rat odontoblasts
Jonghwa Won¹, Hue Vang², Ji Hyun Kim¹, Youngnam Kang², Seog Bae Oh^{1,2*}
¹Department of Brain and Cognitive Sciences, College of Natural Sciences, Seoul National University, Seoul, ²Dental Research Institute and Department of Neurobiology & Physiology, School of Dentistry, Seoul National University, Seoul, Korea
- S 60** P1-26 Menadione generates reactive oxygen species and accumulates intracellular calcium in mouse pancreatic acinar cells
Kyung Jin Choi, Shin Hye Kim, Dong Kwan Kim, Se Hoon Kim, Hyung Seo Park
Department of Physiology, College of Medicine, Konyang University, Daejeon, Korea
- S 60** P1-27 Function of carboxyl coiled coil of TRPC3 in the gating mechanism
Tharaka Darshana Wijerathne, Ji Hyun Kim, Min Ji Kim, Kyu Pil Lee
Department of Physiology, College of Veterinary Medicine, Chungnam National University, Daejeon, Korea
- S 60** P1-28 Quercetin inhabits hSlo3 in a pH and calcium dependent manner through possible inhibition of Phosphatidylinositol kinases
Tharaka Darshana Wijerathne, Ji Hyun Kim, Min Ji Kim, Kyu Pil Lee
Department of Physiology, College of Veterinary Medicine, Chungnam National University, Daejeon, Korea
- S 61** P1-29 Electrophysiological characterization of trpc6 mutants associated with kidney diseases
Tharaka Darshana Wijerathne, Ji Hyun Kim, Min Ji Kim, Kyu Pil Lee
Department of Physiology, College of Veterinary Medicine, Chungnam National University, Daejeon, Korea
- S 61** P1-30 The N-terminus of β -subunits regulates the PIP_2 sensitivity of voltage-gated calcium channels
Seong-Hyeon Byeon, Byung-Chang Suh
Department of Brain and Cognitive Sciences, DGIST
- S 61** P1-31 Hydroxyphenyl octanediamide-induced antinociception via transient receptor potential vanilloid subtype 4 modulation
Geunyeol Choi, Sungjae Yoo, Seung-In Choi, Ji Yeon Lim, Minseok Kim, Hong Hua Piao, Pyung Sun Cho, Sun Wook Hwang
Department of Biomedical Sciences and Department of Physiology, Korea University College of Medicine, Seoul, Korea
- S 61** P1-32 Diphenyleneiodonium (DPI) attenuates Ca^{2+} transient and contraction via desensitization of cardiac Ca^{2+} release sites independently of NADPH oxidase
Jun Wang, Joon-Chul Kim, Min-Jeong-Son, Sun-Hee Woo
College of Pharmacy, Chungnam National University, Daejeon, Korea
- S 62** P1-33 Effects of nitric oxide on voltage-dependent K^+ currents in human cardiac fibroblasts by PKC pathway
Hyemi Bae, Jeongyoon Choi, Youngwon Kim, Donghee Lee, Jaehong Ko, Hyoweon Bang, Inja Lim
Department of Physiology, College of Medicine, Chung-Ang University, Seoul, Korea
- S 62** P1-34 Effects of nitric oxide on voltage-gated K^+ currents in human cardiac fibroblasts
Hyemi Bae, Jeongyoon Choi, Youngwon Kim, Donghee Lee, Jaehong Ko, Hyoweon Bang, Inja Lim
Department of Physiology, College of Medicine, Chung-Ang University, Seoul, Korea
- S 62** P1-35 Determine proarrhythmic risk of 4-oxononanal (4-ONE) by the comprehensive *in vitro* proarrhythmia assay (CiPA)
Seong Woo Choi, Yin-Hua Zhang, Sung Joon Kim
Department of Physiology, Seoul National University College of Medicine

- S 62** P1-36 Hydrolyzable ATP modulates PIP_2 sensitivity of Anoctamin1/TMEM16A
Woori Ko¹, Joo Hyun Nam², Byung-Chang Suh^{1*}
¹Department of Brain & Cognitive Sciences, DGIST, Daegu, ²Department of Physiology and Ion channel Disease Research Center, College of Medicine, Dongguk University, Korea
- S 63** P1-37 Kv3.1 and Kv3.4 are involved in cancer cell migration and invasion
Min Seok Song, Su Min Park, Jeong Seok Park, Jin Ho Byun, Hee Jung Jin, Seung Hyun Seo, Pan Dong Ryu, So Yeong Lee
Laboratory of Veterinary Pharmacology, College of Veterinary Medicine, Seoul National University
- S 63** P1-38 Lipopolysaccharide reduces THIK-1 in Macrophages through AMPK activation
Marie Merci Nyiramana^{1,2}, Eun-Jin Kim², Ji Hyeon Ryu², Dong-Kun Lee^{1,2}, Seong-Geun Hong^{1,2}, Jaehee Han², Dawon Kang^{1,2*}
¹Department of Convergence Medical Science, Gyeongsang National University, Jinju, ²Department of Physiology, College of Medicine Institute of Health Sciences, Gyeongsang National University, Jinju, Korea
- S 63** P1-39 The involvement of two-pore domain potassium channels on epithelial-mesenchymal transition in cancer cells
Yangmi Kim
Department of Physiology, College of Medicine, Chungbuk National University, Cheongju, Korea
- S 64** P1-40 A novel SCN5A mutation results in ventricular arrhythmia with distinct molecular pharmacology and therapeutic response
Hyun-jeong Pyo¹, Hyun-Ji Kim¹, Bok-Geon Kim², June Huh³, Chang-Seok Ki⁴, Jae Boum Youm⁵, Jong-Sun Kang², Hana Cho¹
¹Department of Physiology, and ²Molecular and Cellular Biology, Samsung Biomedical Research Institute, Sungkyunkwan University School of Medicine, Suwon, ³Division of Pediatric Cardiology, Department of Pediatrics, and ⁴Department of Laboratory Medicine and Genetics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, ⁵Department of Physiology, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea
- S 64** P1-41 PRMT1-dependent regulation of ventricular myocyte late Na^+ current and excitability
Hyun-ji Kim¹, Jung-hoon Pyun², Myong-ho Jeong², Jong-Sun Kang², Hana Cho¹
¹Department of Physiology, and ²Molecular and Cellular Biology, Samsung Biomedical Research Institute, Sungkyunkwan University School of Medicine, Suwon, Korea

P2: Muscle Physiology

- S 64** P2-01 (PO-B-05) Higher vulnerability of catecholamine-induced arrhythmia in isolated right atrial myocytes
Ami Kim, Jieun An, Hyun Bin Choi, Tong Mook Kang
Department of Physiology, Single Cell Network Research Center, Sungkyunkwan University School of Medicine, Suwon, Korea
- S 64** P2-02 The vasodilatory mechanisms of repaglinide, a member of meglitinide anti-diabetic drugs by activating protein kinase A and protein kinase G in aortic smooth muscle
Hongliang Li¹, Sung Eun Shin¹, Mi Seon Seo¹, Jin Ryeol An¹, Sung Hun Na², Won Sun Park¹
¹Department of Physiology, ²Department of Obstetrics and Gynecology, Kangwon National University Hospital, Kangwon National University School of Medicine, Chuncheon, Korea
- S 65** P2-03 (PO-B-01) STIM2 and STIM1 have similarities and differences, but both regulate Ca^{2+} movement in skeletal muscle
Mi Ri Oh¹, Keon Jin Lee¹, Mei Huang¹, Jin Ock Kim², Do Han Kim², Chung-Hyun Cho³, Eun Hui Lee¹
¹Department of Physiology, College of Medicine, The Catholic University of Korea, Seoul, ²School of Life Sciences, GIST, Gwangju, ³Department of Pharmacology, College of Medicine, Seoul National University, Seoul, Korea
- S 65** P2-04 Isocitrate dehydrogenase 2 inhibition stimulate vascular inflammation in response to oxidative stress
Su-Jeong Choi^{1,2,3}, Harsha Nagar^{1,2,3}, Shuyu Piao^{1,2,3}, Seonhee Kim^{1,2,3}, Ikjun Lee^{1,3}, Sung-min Kim^{1,3}, Saet-byel Jung^{1,4}, Jeon-Woo Park⁵, Byeong Hwa Jeon^{1,3}, Hee-Jung Song^{1,6}, Cuk-Seong Kim^{1,2,3*}
¹Department of Medical Science, School of Medicine, Chungnam National University, Daejeon, ²Department of BK21Plus CNU Integrative Biomedical Education Initiative, ³Department of Physiology, School of Medicine, Chungnam National University, Daejeon, ⁴Department of Endocrinology, ⁵Department of Thoracic and Cardiovascular Surgery, School of Life Sciences, College of Natural Science, Kyungbook National University, Taegu, ⁶Department of Neurology, School of Medicine, Chungnam National University Hospital, Daejeon, Korea
- S 65** P2-05 Altered redox state modulates endothelial $\text{K}_{\text{Ca}2.3}$ and $\text{K}_{\text{Ca}3.1}$ levels in normal pregnancy and preeclampsia
Shinkyu Choi, Seung-Eun Cho, Ji Ae Kim, Hai-yan Li, Suk Hyo Suh
Department of Physiology, Medical School, Ewha Womans University, Seoul, Korea
- S 66** P2-06 Attenuation of NaHS-induced stimulation of ANP secretion from hypertrophied atria
Lamei Yu, Byung Mun Park, Thi Ai Phuong Hoang, Suhnn Hee Kim
Department of Physiology, Research Institute for Endocrine Sciences, Chonbuk National University Medical School, Jeonju, Korea
- S 66** P2-07 Cardiprotective effects of alamandine via MrgD receptor by anti-apoptosis and ANP system in rats
Byung Mun Park, Thi Ai Phuong Hoang, Lamei Yu, Suhnn Hee Kim
Department of Physiology, Research Institute for Endocrine Sciences, Chonbuk National University Medical School, Jeonju, Korea

- S 66** P2-08 CR6-interacting factor 1 deficiency impairs vascular function by inhibiting the Sirt1-endothelial nitric oxide synthase pathway
Harsha Nagar^{1,2,3}, Su-Jeong Choi^{1,2}, Shuyu Piao^{1,2,3}, Seonhee Kim^{1,2,3}, Ikjun Lee^{1,3}, Sung-min Kim^{1,3}, Saet-byel Jung^{1,4}, Jeen-Woo Park⁵, Byeong Hwa Jeon^{1,3}, Hee-Jung Song^{1,6}, Cuk-Seong Kim^{1,2,3*}
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- S 67** P2-09 Neuronal nitric oxide synthase β is attached to myofilament and maintains sarcomere structure in cardiomyocyte
Ji Hyun Jang, Sung Joon Kim, Yin Hua Zhang
Department of Physiology, Seoul National University, College of Medicine, Seoul, Korea
- S 67** P2-10 *Salicornia europaea* extract suppresses vascular neointima formation through inhibiting MAPK pathway-mediated responses in vascular smooth muscle cells
Long Cui¹, Kang Pa Lee¹, Seung Hyo Jung¹, Mee-Hyang Kweon², Yunkyoung Ryu¹, Kyung Jong Won¹, Bokyoung Kim¹
¹Department of Physiology, School of Medicine, Konkuk University, Chungju, ²Research Center, Phyto Corporation, Seoul, Korea
- S 67** P2-11 The APE1/Ref-1 inhibits inorganic phosphate-induced vascular calcification in vascular smooth muscle cells and ex vivo aorta
Eun Ok Lee¹, Ki Mo Lee¹, Yu Ran Lee¹, Hee Kyoung Joo¹, Myoung Soo Park¹, Cuk-Seong Kim¹, Sunga Choi¹, Jin Ok Jeong², Byeong Hwa Jeon^{1*}
¹Research Institute of Medical Sciences, Department of Physiology, School of Medicine, Chungnam National University, Daejeon, ²Division of Cardiology, Department of Internal Medicine, Chungnam National University, Daejeon, Korea
- S 68** P2-12 Fast, transient relaxation of rat pulmonary artery by angiotensin II via AT1-eNOS signaling pathways
Hae Jin Kim, Ji Hyun Jang, Yin-Hua Zhang, Sung Joon Kim
Department of Physiology, Seoul National University College of Medicine, Seoul, Korea
- S 68** P2-13 Attenuation of vascular contractility in metastatic breast cancer mice
Rany Vorn^{1,2}, Hae Young Yoo¹
¹Chung-Ang University College of Nursing, Seoul, ²Chung-Ang University Graduate School, Seoul, Korea

P3: Neurophysiology

- S 68** P3-01 Development of autaptic sympathetic neuronal culture for studying the functional communication between autonomic neurons and satellite glial cells
Seong Jun Kang, Choong-Ku Lee, So Hyun Kim, Seong-Woo Jeong
Department of Physiology, Yonsei University Wonju College of Medicine, Wonju, Korea
- S 68** P3-02 (PO-A-03) Peripheral GABA_A receptor-mediated signals facilitate chronic inflammatory pain
Pa Reum Lee¹, Seo-Yeon Yoon^{1,2}, Yong Ho Kim³, Seog Bae Oh^{1,2}
¹Department of Brain and Cognitive Sci., Col. of Natural Sci., Seoul Natl. Univ., Seoul, ²Dent. Res. Inst. and Department of Neurobio. & Physiology, School of Dentistry, Seoul Natl. Univ., Seoul, ³Department of Physiology, Col. of Medicine, Gachon Univ., Incheon, Korea
- S 69** P3-03 (PO-A-04) SHP2 mutation mediated cell type specific dysregulation of Ras-Erk signaling pathway
Hyun-Hee Ryu^{1,2†}, Tae-Hyun Kim^{3†}, Minkyung Kang^{1,4}, DaeHee Han³, Yong Gyu Kim^{1,4}, Jiyeon Ha¹, Chae-Seok Lim³, Chul-Hong Kim², Sang Jeong Kim^{1,4,6}, Alcino J. Silva⁵, Jung-Woong Kim^{2*}, Bong-Kiun Kaang^{3*}, Yong-Seok Lee^{1,4,6*}
¹Department of Physiology, Seoul National University College of Medicine, ²Department of Life Science, Chung-Ang University, ³School of Biological Sciences, College of Natural Sciences, Seoul National University, ⁴Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea, ⁵Department of Neurobiology, Integrative Center for Learning and Memory, Brain Research Institute, University of California Los Angeles, California, USA, ⁶Neuroscience Research Institute, Seoul National University College of Medicine, Seoul, Korea
- S 69** P3-04 (PO-A-05) Climbing fiber burst-mediated sensory coding is directly represented in post-synaptic Purkinje cell
Seung-Eon Roh^{1,3*}, Seung Ha Kim^{1,2}, Yong-Gyu Kim¹, Chang-Hyun Ryu¹, Chang-Eop Kim¹, Sun Kwang Kim³, Sang Jeong Kim^{1,2}
¹Department of Physiology and ²Department of Biomedical Science, College of Medicine, Seoul National University, ³Department of Physiology, College of Korean Medicine, Kyung Hee University, Seoul, Korea
- S 69** P3-05 (PO-A-06) Channel-mediated GABA release from reactive astrocytes in epileptic hippocampus
Chiranjivi Neupane¹, Sudip Pandit¹, Ramesh Sarma¹, Junsung Woo², C Justin Lee², Jin Bong Park¹
¹Department of Physiology, School of Medicine and Brain Research Institute, Chungnam National University, Daejeon, ²Center for Neural Science, Korea Institute of Science and Technology (KIST), Seoul, Korea
- S 70** P3-06 (PO-B-06) Singular mechanisms of the thermal sweating to central sudomotor in tropical Africans
Jeong-Beom Lee^{1,*}, Young-Ki Min¹, Jeong-Ho Kim², Yun Su Eun², Jin Wook Kim², Seo Yun Jung², Suk Min Han², Jae Yeong Bae², Hee-Jin Lee³, Mi-Young Lee³
¹Department of Physiology, College of Medicine, Soonchunhyang University, Cheonan, ²A Student at the College of Medicine, Soonchunhyang University, Cheonan, ³Global Graduate School of Healthcare, Soonchunhyang University, Asan, Korea

- S 70** P3-07 Selective expression of Kv4.1 in mature granule cells contributes to sparse firing of hippocampal dentate gyrus
Kyung-Ran Kim^{1,2,3}, Sooyun Kim^{1,2,3}, Young Ho Suh⁴, Jong-Sun Kang⁵, Suk-Ho Lee^{1,2,3}, Hana Cho^{6,7*}, Won-Kyung Ho^{1,2,3*}
¹Department of Physiology, ²Biomembrane Plasticity Research Center, ³Neuroscience Research Institute, ⁴Department of Biomedical Science, Seoul National University College of Medicine, Seoul, Department of ⁵Molecular Cell Biology and ⁶Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea, ⁷Lead Contact
- S 70** P3-08 Spinal D-serine modulates neuronal nitric oxide synthase phosphorylation leading to the development of mechanical allodynia in a mouse model of neuropathic pain
Sheu-Ran Choi, Hoon-Seong Choi, Ho-Jae Han, Jang-Hern Lee
Department of Veterinary Physiology, BK21 PLUS Program for Creative Veterinary Science Research, Research Institute for Veterinary Science and College of Veterinary Medicine, Seoul National University, Seoul, Korea
- S 70** P3-09 Serotonin increases inhibitory but not excitatory synaptic transmission in the substantia gelatinosa neurons of trigeminal subnucleus caudalis
Seon Hui Jang, Thi Huyen Phuong Tran, Seong Kyu Han, Soo Joung Park
Department of Oral Physiology and Institute of Oral Bioscience, School of Dentistry, Chonbuk National University, Jeonju, Jeonbuk, Korea
- S 71** P3-10 The potential role of TLR2 on alcohol-induced behaviors
Yujin Jang, Min hee Lee, Dong Kwan Kim
Department of Physiology, Konyang University College of Medicine, Daejeon, Korea
- S 71** P3-11 Regulation of NMDAR receptiveness through calpain inhibition in midbrain dopamine neurons
Shin Hye Kim, Sun Hee Jeon, Hoo Shin Lee, Dong Kwan Kim, Hyung Seo Park, Se Hoon Kim
Department of Physiology, College of Medicine, Konyang University, Daejeon, Korea
- S 71** P3-12 Pharmacological inhibition of eIF2 α phosphorylation can rescue synaptic plasticity and memory deficits in Alzheimer's disease mouse models
Kyoung-Doo Hwang¹, Myeong Seong Bak², Sang Jeong Kim², Sangmyung Rhee¹, Yong-Seok Lee²
¹Department of Life Science, College of Natural Science, Chung-Ang University, Seoul, ²Department of Physiology, Department of Biomedical Science, Seoul National University College of Medicine, Seoul, Korea
- S 71** P3-13 Branch specific input wiring on distal tuft dendrites of L5 pyramidal neurons in primary somatosensory cortex
Young-Eun Han, Jun-Ho Choi, Jong-Cheol Rah
Department of Structure & Function of Neural Network, Korea Brain Research Institute, Daegu, Korea
- S 72** P3-14 The role of spinal cord D-serine in the development of mirror-image pain: different modulation of astrocyte sigma-1 receptors and gap junctions on D-serine production
Hoon-Seong Choi, Sheu-Ran Choi, Ho-Jae Han, Jang-Hern Lee*
Department of Veterinary Physiology, BK21 PLUS Program for Creative Veterinary Science Research, Research Institute for Veterinary Science and College of Veterinary Medicine, Seoul National University, Seoul, Korea
- S 72** P3-15 Correlation between hippocampal ensemble dynamics and memory specificity
Myeong Seong Bak, Yong-Seok Lee
Department of Physiology, Department of Biomedical Science, Seoul National University College of Medicine, Seoul, Korea
- S 72** P3-16 Repurposed drugs for acute ischemic stroke
Dong Hyeon Lee^{1,2}, Kang Ahn¹, Jongman Yoo^{2,3}
¹Department of Physiology, ²Institute of Basic Medical Sciences, ³Department of Microbiology, School of Medicine, CHA University
- S 73** P3-17 Adrenergic modulation of cerebellar glial activity during nociception
Seung Ha Kim^{1,2}, Seung-Eon Roh^{1,3}, Sun Kwang Kim³, Sang Jeong Kim^{1,2}
¹Department of Physiology and ²Department of Biomedical Science, College of Medicine, Seoul National University, ³Department of Physiology, College of Korean Medicine, Kyung Hee University
- S 73** P3-18 Sex-specific behavioral abnormalities in Tert transgenic mice
Ki Chan Kim¹, Kyu Suk Cho¹, Edson Luck Gonzales¹, Schley Valencia¹, Soo Yeon Kim², Kyoung Ja Kwon¹, Chan Young Shin¹
¹Department of Pharmacology, School of Medicine, Konkuk University, ²Department of Life Science, College of Natural Science, Ewha Woman's University
- S 73** P3-19 Construction of time-evolving pain-related brain network by literature-mining
Jihong Oh, Chang-Eop Kim
Department of Physiology, Gachon University College of Korean Medicine, Gyeonggi-do, Korea
- S 73** P3-20 Metabotropic glutamate receptor 5 in the brain governs sensory pain and negative mood symptoms in the spinal nerve injured rats: [11C] ABP688 PET study
Geehoon Chung^{1,2}, Chae Young Kim^{1,3}, Sang Jeong Kim^{1,2,3,4}
¹Department of Physiology, Seoul National University College of Medicine, ²Department of Brain and Cognitive Sciences, Seoul National University College of Natural Sciences, ³Department of Biomedical Sciences, Seoul National University College of Medicine, ⁴Neuroscience Research Institute, Seoul National University College of Medicine

- S 74** P3-21 In adolescence, elevation of GABA activity in the ventral hippocampus is related with anxiety- and aggressive- like behavior induced by neonatal maternal separation
Sang Yep Shin, Sun Seek Min
Department of Physiology and Biophysics Eulji University of Medicine, Eulji University, Daejeon, Korea
- S 74** P3-22 Pacemaking of midbrain dopamine neurons: role of TRPC3 and NALCN channels
Ki Bum Um¹, Lutz Birnbaumer², Hyun Jin Kim¹, Myoung Kyu Park¹
¹Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea, ²IB-INTECH, Univ Nacional de San Martin; Av 25 de Mayo y Francia, San Martin CP1650, Prov Buenos Aires, Argentina
- S 74** P3-23 Metabotropic glutamate receptor 5 is involved in 0.1 mM [Mg²⁺]_o-induced [Ca²⁺]_i spikes in cultured rat hippocampal neurons
Su Jeong Jeon, Ji Seon Yang, Yi Jae Hong, Shin Hee Yoon
Department of Physiology, College of Medicine, The Catholic University of Korea, Seoul, Korea
- S 75** P3-24 Syringaresinol reduces excitatory synaptic transmission and picrotoxin-induced epileptic activity through the presynaptic modulation at the hippocampal CA3-CA1 synapses
Young Seon Cho, Woo Seok Song, Sang Ho Yoon, Kyeong-Yeol Park, Myoung-Hwan Kim
Department of Physiology and Biomedical Sciences, Seoul National University College of Medicine
- S 75** P3-25 Purkinje cell specific STAT3 regulates emotional memory formation at excitatory synapses
Jeong-Kyu Han, Sun-Ho Kwon, Yong-Gyu Kim, Seung-Eon Roh, Sang-Kyu Ye, Sang Jeong Kim
Seoul National University College of Medicine
- S 75** P3-26 Effect of cell type-specific expression of a RASopathy-associated mutations on learning and memory
Minkyung Kang^{1,2}, Benjamin G. Neel³, Yong-Seok Lee^{1,2}
¹Department of Physiology, Seoul National University College of Medicine, Seoul, ²Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea, ³Laura and Isaac Perlmutter Cancer Center, New York University Langone Medical Center, New York, USA
- S 75** P3-27 Neuroprotective effects of 3,3'-diindolylmethane on hippocampal neuropathology following pilocarpine-induced status epilepticus
Mi-Hye Kim^{1,2}, Yeong Ran Hwang³, Hee Jung Kim¹
¹Department of Physiology, College of Medicine, ²Department of Medical Laser, Graduate School, ³Department of Biological Sciences, College of Natural Sciences, Dankook University, Cheonan, Korea
- S 76** P3-28 Long-term depression of intrinsic excitability accompanied by the synaptic depression in the cerebellar purkinje cells
Hyun Geun Shim^{1,2*}, Dong Cheol Jang^{1,3*}, Sang Jeong Kim^{1,2}
¹Department of Physiology, ²Department of Biomedical Science, College of Medicine, ³Department of Brain and Cognitive Science, College of Natural Science, Seoul National University
- S 76** P3-29 Encoding rules for multiple stimulus features of touch and pain in the S1 cortex
Yoorim Kim¹, Chang-Eop Kim², Heera Yoon³, Sun Kwang Kim^{3,4}, Sang Jeong Kim¹
¹Department of Physiology, School of Medicine, Seoul National University, Seoul, ²Department of Physiology, College of Korean Medicine, Gacheon University, Kyunggi-do, ³Department of Science in Korean Medicine, Graduate School, Kyung Hee University, Seoul, ⁴Department of Physiology, College of Korean Medicine, Kyung Hee University, Seoul, Korea
- S 76** P3-30 Effects of resveratrol on the substantia gelatinosa neurons of the subnucleus caudalis in immature mice
Seon Hui Jang, Soo Joung Park, Seong Kyu Han*
Department of Oral Physiology and Institute of Oral Bioscience, School of Dentistry, Chonbuk National University, Jeonju, Jeonbuk, Korea
- S 76** P3-31 Activation of pathway-specific synaptic inputs onto layer 5 pyramidal neurons in visual cortex revealed by FM1-43 dye unloading
Kwang-Hyun Cho¹, Kayoung Joo¹, Mina Yoon¹, Hyun-Jong Jang^{1,2}, Duck-Joo Rhie^{1,2}
¹Department of Physiology, College of Medicine, ²Catholic Neuroscience Institute, The Catholic University of Korea, Seoul, Korea
- S 77** P3-32 Analgesic effects of low frequency stimulator on docetaxel-induced neuropathic pain in mice
Suk-Yun Kang, Yeonhee Ryu, O Sang Kwon, Kwang-Ho Choi, Jun Bum Kim
KM Fundamental Research Division, Korea Institute of Oriental Medicine, Daejeon, Korea
- S 77** P3-33 Direct experimental evidences for modulation of cortical neural excitability of transcranial direct current stimulation in the intact somatosensory cortex of rats
Min Sun Kim, Ho Koo, Byung Rim Park
Department of Physiology, Wonkwang University School of Medicine
- S 77** P3-34 Inhibition of spinal PPAR-gamma affects negative influence to motor function recovery after spinal contusive injury in rats
Youngkyung Kim^{1,2}, Kyu-Won Park¹, Jeonghwa Oh¹, Junesun Kim², Young Wook Yoon¹
¹Department of Physiology and Neuroscience Research Institute, ²BK21 PLUS Program, Department of Public Health Sciences, Graduate School, Korea University, Seoul, Korea
- S 78** P3-35 Layer- and cell type- specific cholinergic regulation of synaptic transmission in pyramidal neurons in the rat visual cortex
Kayoung Joo¹, Mina Yoon¹, Kwang-Hyun Cho¹, Hyun-Jong Jang^{1,2}, Duck-Joo Rhie^{1,2}
¹Department of Physiology, ²Catholic Neuroscience Institute, College of Medicine, The Catholic University of Korea, Seoul, Korea

- S 78** P3-36 Mossy fibre synaptic inputs are privileged to induce long-term potentiation of intrinsic excitability in CA3 pyramidal cells
Kisang Eom¹, Jung Ho Hyun², Jaeyoung Yoon¹, Sooyun Kim¹, Won-Kyung Ho¹, Suk-Ho Lee¹
¹Cell Physiology Lab. Department of Physiology and bioMembrane Plasticity Research Center, Seoul National University College of Medicine and Neuroscience Research Institute, Seoul National University Medical Research Center, Seoul, Korea, ²The present address: Max Planck Florida Institute for Neuroscience, Jupiter, Florida 33458, USA
- S 78** P3-37 Density and output of sweat glands contribute to sudomotor activity in tropical Africans and temperate Koreans
Jeong-Beom Lee^{1*}, Young-Ki Min¹, Jeong-Ho Kim², Yun Su Eun², Jin Wook Kim², Seo Yun Jung², Suk Min Han², Jae Yeong Bae², Hee-Jin Lee³, Mi-Young Lee³
¹Department of Physiology, College of Medicine, Soonchunhyang University, Cheonan, ²A Student at the College of Medicine, Soonchunhyang University, Cheonan, ³Global Graduate School of Healthcare, Soonchunhyang University, Asan, Korea
- S 79** P3-38 *Cinnamomi Cortex* and its major phytochemicals alleviate oxaliplatin-induced cold and mechanical allodynia in rodents
Ji Hwan Lee¹, Woojin Kim², Sun Kwang Kim^{1,2}
¹Department of Science in Korean Medicine, Graduate School, Kyung Hee University, Seoul, ²Department of Physiology, College of Korean Medicine, Seoul, Korea
- S 79** P3-39 Anti-despair-like behavior in RalBP1-mutant mice presumably caused by reduced synaptic inhibition in the hippocampus
Sang Ho Yoon, Kyeong-Yeol Park, Woo Seok Song, Young Seon Cho, Myoung-Hwan Kim
Department of Physiology, Seoul National University College of Medicine, Seoul, Korea
- S 79** P3-40 Effects of transcranial direct current stimulation on saturated long-term potentiation in visual cortex of rats
Ho Koo, Byung Rim Park, Min Sun Kim
Department of Physiology, Wonkwang University School of Medicine, Iksan, Korea
- S 80** P3-41 Zone-dependency of Purkinje cell Ca²⁺ dynamics originate from zone-dependent heterogeneity of CF input
Seung-Eon Roh^{1,3}, Seung Ha Kim^{1,2}, Yong-Gyu Kim¹, Chang-Eop Kim¹, Sun Kwang Kim³, Sang Jeong Kim^{1,2}
¹Department of Physiology and ²Department of Biomedical Science, College of Medicine, Seoul National University, ³Department of Physiology, College of Korean Medicine, Kyung Hee University, Seoul, Korea
- S 80** P3-42 Presynaptic mitochondrial calcium release enhances short-term facilitation during brief high-frequency stimulation
Che Ho Yang, Won-Kyung Ho, Suk-Ho Lee
Department of Physiology, Seoul National University College of Medicine
- S 80** P3-43 The role of cerebellar Purkinje cell's intrinsic excitability in fear conditioning
Jaegwon Lee, Dong Cheol Jang, Hyun Geun Shim, Myeong-seong Bak, Sang Jeong Kim
Department of Physiology Seoul National University College of Medicine
- S 80** P3-44 Phenylalanine facilitates long-term depression in the hippocampus
Woo Seok Song, Sang Ho Yoon, Young Seon Cho, Kyeong-Yeol Park, Myoung-Hwan Kim
Department of Physiology and Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea
- S 81** P3-45 Distinctive firing properties of pyramidal neurons in infralimbic and prelimbic areas of medial prefrontal cortex
Jaehan Kwon, Weonjin Yu, Suk Ho Lee, Won-Kyung Ho
Department of Physiology, Seoul National University College of Medicine, Seoul, Korea

P4: Molecular Physiology

- S 81** P4-01 (PO-B-04) WNK1-mediated Ca²⁺ signaling is a novel culprit for hepatic stellate cell activation and fibrosis
Kyu-Hee Hwang¹⁻⁴, Ji-Hee Kim^{1,3,4}, Soo-Jin Kim¹⁻⁴, Hung Minh Tran¹⁻⁴, In Deok Kong¹⁻³, Kyu-Sang Park¹⁻⁴, Seung-Kuy Cha^{1-4*}
Departments of ¹Physiology and ²Global Medical Science, ³Institute of Lifestyle Medicine, and ⁴Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Wonju, Gangwon-do, Korea
- S 81** P4-02 (PO-A-07) The E3 ligase c-Cbl inhibits cancer cell migration by neddylation of the proto-oncogene c-Src
Gun-Woo Lee¹, Jun Bum Park¹, Sung Yeon Park^{2,3}, Seo Jieun¹, Seung-Hyun Shin¹, Jong-Wan Park^{1,2}, Sang Jung Kim^{1,2,3}, Masatoshi Watanabe⁴, Yang-Sook Chun^{1,2,3*}
¹Department of Biomedical Science, ²Ischemic/Hypoxic Disease Institute, ³Department of Physiology, Seoul National University College of Medicine, Seoul, ⁴Laboratory for Medical Engineering, Graduate School of Engineering, Yokohama National University
- S 81** P4-03 TRPC6 regulate NFATc1 and TLR signaling in osteoclastogenesis
Yu-Mi Yang, Dong Min Shin
Department of Oral Biology, Yonsei University College of Dentistry, Seoul, Korea
- S 82** P4-04 Activation of transient receptor potential melastatin 7 (TRPM7) channel increases basal autophagy and reduces amyloid β -peptide
Hyun Geun Oh, Sungkwon Chung
Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea
- S 82** P4-05 Gas6 inhibit epithelial-mesenchymal transition in lung alveolar epithelial cells
Ji-Hae Jung, Young-So Yoon, Ye-Ji Lee, Jihee Lee Kang
Department of Physiology, Tissue Injury Defense Research Center, School of Medicine, Ewha Womans University, Seoul, Korea

- S 82** P4-06 Simvastatin treatment boosts benefits of apoptotic cell infusion in murine lung fibrosis
Ye-Ji Lee, Meung-Joo Kim, Ji-Hye Jung, Young-So Yoon, Youn-Hee Choi, Jihee Lee Kang
Department of Physiology, Tissue Injury Defense Research Center, School of Medicine, Ewha Womans University, Seoul, Korea
- S 82** P4-07 Exposure of macrophages to apoptotic cells inhibits lung fibroblast invasion
Yong-Bae Kim¹, Jihee Lee^{1,2}
¹Tissue Injury Defense Research Center, ²Department of Physiology, School of Medicine, Ewha Womans University, Seoul, Korea
- S 83** P4-08 Downregulation of mitochondrial PDP1 is required for the early stage differentiation of embryonic stem cell to cardiac myocytes
Hyoung Kyu Kim, Hye Jin Heo, Jin Han
National Research Laboratory for Mitochondrial Signaling, Department of Physiology, Department of Health Sciences and Technology, BK21 Plus Project Team, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea
- S 83** P4-09 Cardiac mitochondrial metabolism and function
Jin Han
National Research Laboratory for Mitochondrial Signaling, Department of Physiology, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea
- S 83** P4-10 Low-intensity ultrasound decreases high glucose- and sodium nitroprusside-induced nitric oxide generation in the human retinal pigment epithelial cells
Mrigendra Bir Karmacharya¹, Binika Hada², Byung Hyune Choi², So Ra Park^{1*}
¹Department of Physiology and Biophysics, ²Department of Biomedical Sciences, Inha University College of Medicine, Incheon, Korea
- S 83** P4-11 Novel function of Jumonji C (JmjC) domain-containing protein in osteoclastogenesis
Seon-Young Kim¹, Hye-Jin Kim¹, Do Won Jung¹, Jong-Wan Park², Yang-Sook Chun^{1,2}
¹Department of Physiology, ²Ischemic/Hypoxic Disease Institute, Seoul National University College of Medicine, Seoul, Korea
- S 84** P4-12 Leptin suppresses glutamate-induced apoptosis through regulation of ERK1/2 signaling pathways in rat primary astrocytes
Hyunju Park, So-Hee Ahn, Yieun Jung, Joo Chun Yoon, Youn-Hee Choi*
Departments of Physiology, Tissue Injury Defense Research Center, Ewha Womans University School of Medicine
- S 84** P4-13 Minor ginsenosides inhibits growth, migration and invasion of neuroblastoma cells via caspase activation and suppressing epithelial mesenchymal transition
Jung Mi Oh¹, Hye Lan Kim¹, Jung-woo Lee², Sungkun Chun¹
¹Department of Physiology, ²Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School, Jeonju, Korea
- S 84** P4-14 CRIF-1 deficiency increases senescence through SIRT3 pathway in endothelial cells
Seonhee Kim^{1,2,3}, Shuyu Piao^{1,2,3}, Harsha Nagar^{1,2,3}, Su-jeong Choi^{1,2,3}, Ik jun Lee^{1,3}, Sungmin Kim^{1,3}, Saet-byel Jung^{1,4}, Byeong Hwa Jeon^{1,3}, Hee-Jung Song^{1,5}, Cuk-seong Kim^{1,2,3*}
¹Department of Medical Science, School of Medicine, Chungnam National University, Daejeon, ²Department of BK21Plus CNU Integrative Biomedical Education Initiative, ³Department of Physiology, School of Medicine, Chungnam National University, Daejeon, ⁴Department of Endocrinology, School of Medicine, Chungnam National University, Daejeon, ⁵Department of Neurology, School of Medicine, Chungnam National University, Daejeon, Korea
- S 84** P4-15 Minor Rh3 induces apoptotic cell death in SK-N-BE (2) human neuroblastoma cells through a caspase-dependent pathway
Jung Mi Oh¹, Hye Lan Kim¹, Jung-woo Lee², Sungkun Chun¹
¹Department of Physiology, ²Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School, Jeonju, Korea
- S 85** P4-16 Glucocorticoid receptor positively regulates transcription of FNDC5 in the liver
Hyoung Kyu Kim, Min Kim, Jin Han*
National Research Laboratory for Mitochondrial Signaling, Department of Physiology, Department of Health Sciences and Technology, BK21 Plus Project Team, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea
- S 85** P4-17 Mitochondrial molecular targets of nobletin in the neuroprotective mechanism in primary cortical neurons and isolated brain mitochondria
Khulan Amarsanaa, Ji Hyung Lee, Sung-Cherl Jung, Su-Yong Eun
Department of Physiology, Jeju National University School of Medicine, Jeju, Korea
- S 85** P4-18 Functional roles of P2X7 receptor and NALP3 inflammasome in head and neck cancer
Sangwoo Lee, JuYoung Bae, Kyungpyo Park*
Department of Oral Physiology, School of Dentistry, Seoul National University
- S 86** P4-19 Role of NEDDylation pathway in non alcoholic fatty liver disease
Uk-Il Ju¹, Do-Won Jeong¹, Jong-Wan Park^{1,2}, Yang-Sook Chun^{1,2,3}
¹Department of Biomedical Sciences, ²Ischemic/Hypoxic Disease Institute, ³Department of Physiology, Seoul National University College of Medicine
- S 86** P4-20 Valproic acid promotes caspase-dependent apoptosis and autophagy in human lung cancer cells
Bo Ram Han, Hyun Kyung Park, Woo Hyun Park*
Department of Physiology, Medical School, Research Institute for Endocrine Sciences, Chonbuk National University, Jeonju, Korea

- S 86** P4-21 Crif1 deficiency inhibits keloid fibroblasts migration, proliferation and extracellular matrix synthesis
Sungmin Kim^{1,2,3,4}, Su-jeong Choi^{1,2,3}, Harsha Nagar^{1,2,3}, Shuyu Piao^{1,2,3}, Seonhee Kim^{1,2,3}, Ikjun Lee^{1,2,3},
Byeong Hwa Jeon^{1,3}, Sang-Ha Oh⁴, Cuk-Seong Kim^{1,2,3*}
¹Department of Medical Science, School of Medicine, Chungnam National University, Daejeon, ²Department of BK21Plus CNU Integrative Biomedical Education Initiative, ³Department of Physiology, School of Medicine, Chungnam National University, Daejeon, ⁴Department of Plastic and Reconstructive Surgery, Chungnam National University Hospital, Daejeon, Korea
- S 87** P4-22 CR6 interacting factor-1 linked with tetrahydrobiopterin deficiency and endothelial nitric oxide synthase uncoupling
Ikjun Lee^{1,2,3}, Shuyu Piao^{1,2,3}, Seonhee Kim^{1,2,3}, Harsha Nagar^{1,2,3}, Su-Jeong Choi^{1,2,3}, Sung-min Kim^{1,2,3}, Saet-byel Jung^{1,4},
Byeong Hwa Jeon^{1,3}, Hee-Jung Song^{1,5}, Cuk-Seong Kim^{1,2,3*}
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- S 87** P4-23 Treatment of valproic acid enhances arsenic trioxide-induced cell death in human large cell lung cancer cells
Hyun Kyung Park, Bo Ram Han, Woo Hyun Park*
Department of Physiology, Medical School, Research Institute for Endocrine Sciences, Chonbuk National University, Jeonju, Korea
- S 87** P4-24 Regulation of lipocalin-2 expression by nitric oxide under inflammatory condition in RINm5F islet beta-cells
Seo-Yoon Chang, Hyun-Jong Jang, Yang-Hyeok Jo, Myung-Jun Kim
Department of Physiology, College of Medicine, The Catholic University of Korea, Seoul, Korea
- S 87** P4-25 Role of PHF2 in the development of non-alcoholic fatty liver disease
Do-Won Jeong¹, Kyoung-Hwa Lee², Yang-Sook Chun^{1,2}
¹Department of Physiology, ²Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea
- S 88** P4-26 Inhibitory effect of corylifol C on RANKL-induced osteoclast differentiation and bone resorption
Jung Yun Kang, Inik Chang, Dong Min Shin
Department of Oral Biology, BK21 PLUS Project, Yonsei University College of Dentistry, Seoul, Korea
- S 88** P4-27 Negative regulation of Wnt/ β -catenin signaling pathway by SIRT 6 inhibits the growth and metastasis in hepatocellular carcinoma
Hua Jin, Soo Mi Kim*
Department of Physiology, Institute for Medical Science, Chonbuk National University Medical School, Jeonju, Korea
- S 88** P4-28 Identification of cytokines that induce cisplatin resistance and migration secreted from macrophage
Taehee Kim, Sang Do Lee
Department of Physiology, Department of thoracic surgery, Chungnam National University School of Medicine, Daejeon, Korea
- S 89** P4-29 Inactivation of YAP by rhBMP-2 suppresses the proliferation of human colorectal cancer cell
Yu Chuan Liu, Soo Mi Kim*
Department of Physiology, Institute for Medical Sciences, Chonbuk National University Medical School, Jeonju, Korea
- S 89** P4-30 The effect of macrophage-secreted IL-1 β on migration in lung cancer A549 cells
Han Na Choi, Taehee Kim, Sang Do Lee
Department of Physiology, Department of thoracic surgery, Chungnam National University School of Medicine, Daejeon, Korea
- S 89** P4-31 Activation of TTP by resveratrol suppresses the growth and invasion of colorectal cancer cells
Hua Jin, Soo Mi Kim*
Department of Physiology, Institute for Medical Science, Chonbuk National University Medical School, Jeonju, Korea
- S 89** P4-32 Protein kinase C β II induces endothelial dysfunction via mitochondrial ROS generation in HUVECs
Hee Kyoung Joo¹, Yu Ran Lee¹, Eun Ok Lee¹, Myoung Soo Park², Sunga Choi¹, Cuk-Seong Kim¹, Byeong Hwa Jeon¹
¹Research Institute for Medical Sciences, Department of Physiology, School of Medicine, Chungnam National University, Daejeon, ²Preclinical Research Center, Chungnam National University Hospital, Daejeon, Korea
- S 90** P4-33 Activation of SREBP signaling by HN1 promotes the growth and metastasis in hepatocellular carcinoma
Hua Jin, Soo Mi Kim*
Department of Physiology, Institute for Medical Science, Chonbuk National University Medical School, Jeonju, Korea
- S 90** P4-34 Role of collagen triple helix repeat containing-1 in esophageal adenocarcinoma cells
Soo Mi Kim*
Department of Physiology, Institute for Medical Science, Chonbuk National University Medical School, Jeonju, Korea
- S 90** P4-35 Inactivation of Akt by UA induced apoptosis in esophageal cancer cells
Ruo Yu Meng, Soo Mi Kim*
Department of Physiology, Institute for Medical Sciences, Chonbuk National University Medical School, Jeonju, Korea
- S 90** P4-36 SOX12 is involved in sphingosylphosphorylcholine-induced smooth muscle-like cell differentiation of human mesenchymal stem cells via reactive oxygen species
Suji Baek¹, Kang Pa Lee¹, Seung Hyo Jung¹, Yunkyoung Ryu¹, Hwan Myung Lee², Kyung Jong Won¹, Bokyoung Kim¹
¹Department of Physiology, School of Medicine, Konkuk University, Seoul, ²Department of Cosmetic Science, College of Life and Health, Hoseo University, Asan, Korea

- S 91 P4-37** αKlotho ameliorates diabetic nephropathy via stabilizing podocyte Ca²⁺ signaling
Ji-Hee Kim^{1,3,4}, Kyu-Hee Hwang¹⁻⁴, Hung Minh Tran¹⁻⁴, In Deok Kong¹⁻³, Kyu-Sang Park¹⁻⁴, Seung-Kuy Cha¹⁻⁴
Departments of ¹Physiology and ²Global Medical Science, ³Institute of Lifestyle Medicine, and ⁴Mitohormesis Research Center, Yonsei University Wonju College of Medicine, Wonju, Gangwon-do, Korea
- S 91 P4-38** Tau-mediated circadian rhythm disruption and cognitive dysfunction in Alzheimer's disease mouse model
Ahbin Kim¹, Ji Hyun Park², Haeng Jun Kim¹, Hyundong Song¹, Sehyung Cho², Inhee Mook-Jung^{1#}
¹Department of Biochemistry & Biomedical Science, College of Medicine, Seoul National University, Seoul, ²College of Medicine, Kyunghee University, Seoul, Korea
- S 91 P4-39** In vitro trans-differentiation of primary mouse hepatic stellate cells via TGF-β-ERK-mTOR axis
Soo-Jin Kim, Ranjan Das, Luong Dai Ly, Nhung Thi Nguyen, Kyu-Hee Hwang, Ji-Hee Kim, Seung-Kuy Cha, Kyu-Sang Park
Department of Physiology, Yonsei University Wonju College of Medicine, Wonju, Korea
- S 91 P4-40** Role of mitochondrial phosphate transporters in vascular calcification
Nhung Thi Nguyen, Tuyet Thi Nguyen, Soo-Jin Kim, Luong Dai Ly, Seung-Kuy Cha, Kyu-Sang Park
Department of Physiology, Yonsei University Wonju College of Medicine, Wonju, Korea
- S 92 P4-41** Association of mGluR-dependent LTD at excitatory synapses with endocannabinoid-dependent LTD of inhibitory synapses leads to EPSP to spike potentiation at Schaffer collateral-CA1 synapses
Hye-Hyun Kim^{1,2,3}, Joo Min Park⁴, Suk-Ho Lee^{1,2,3}, Won-Kyung Ho^{1,2,3*}
¹Department of Physiology, ²Biomembrane Plasticity Research Center, ³Neuroscience Research Center, Seoul National University College of Medicine, Seoul, ⁴Center for Cognition and Sociality, Institute for Basic Science, Daejeon, Korea
- S 92 P4-42** Investigation of physiological function of the murine bitter taste receptor Tas2r108
Su-Young Ki, Ki-Myung Chung, Young-Kyung Cho, Kyung-Nyun Kim
Department of Physiology and Neuroscience, College of Dentistry and Research Institute of Oral Sciences, Gangneung-Wonju National University, Gangneung, Korea
- S 92 P4-43** Hepatoprotective effects of oyster-derived Tyr-Ala peptide on fulminant hepatitis
Adrian S. Siregar^{1,2}, Soo Buem Cho³, Eun-Jin Kim¹, Chengliang Xie⁴, Marie Merci Nyiramana^{1,2}, Si-Hyang Park⁵, Dae Hyun Song⁶, Nam-Gil Kim⁷, Yeung Joon Choi⁸, Sang Soo Kang⁴, Dawon Kang^{1,2}
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- S 93 P4-44** The intracellular Ca²⁺ channel TRPML3 is a PtdIns3P effector that regulates early autophagosome biogenesis
So Woon Kim¹, Mi Kyung Kim¹, Kyoung Sun Park², Hyun Jin Kim¹
¹Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, ²Wide River Institute of Immunology, Seoul National University College of Medicine, Gangwon-do, Korea
- S 93 P4-45** Palmitoylation controls trafficking of the intracellular Ca²⁺ channel TRPML3 to regulate autophagy
Dong Hyun Kim, Yun Min Park, Mi Kyung Kim, So Woon Kim, Hyun Jin Kim
Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea
- S 93 P4-46** Role of endothelin-2 in renal cell carcinoma
SeulKi Kim, InIk Chang, Dong Min Shin
Department of Oral Biology, BK21 PLUS Project, Yonsei University College of Dentistry, Seoul, Korea
- S 93 P4-47** Role of physiological ET-1 in bone remodeling
Ji su Sun, Dong Min Shin, Inik Chang
Department of Oral Biology, BK21 PLUS Project, Yonsei University College of Dentistry, Seoul, Korea
- S 94 P4-48** Inhibition of neddylation facilitates cell migration through enhanced phosphorylation of caveolin-1 in PC3 and U373 cells
Sung Yeon Park, Yang-Sook Chun
Department of Physiology, Seoul National University College of Medicine, Seoul, Korea
- S 94 P4-49** Familial Alzheimer's presenilin 1 mutation elevate cellular cholesterol levels and facilitates lipid raft localization of β-amyloid precursor protein
Yoon Young Cho, Oh-Hoon Kwon, Hyun Geun Oh, Sungkwon Chung
Department of Physiology, Sungkyunkwan University School of Medicine
- S 94 P4-50** Insulin increases O-GlcNAcylation of amyloid precursor protein promoting its non-amyloidogenic processing
Oh Hoon Kwon, Sungkwon Chung
Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea
- S 94 P4-51** Characterization of molecular mechanisms underlying voltage-gated Ca²⁺ channel modulation by DREADD
Yong-Seuk Kim, Byung-Chang Suh
Department of Brain & Cognitive Sciences, DGIST, Daegu, Korea

P5: Exercise & Endocrine Physiology

- S 95** P5-01 The effect of fibroblast growth factor receptor signaling inhibition during resistance training on muscle and bone quality in mice
Suhan Cho¹, Hansol Song¹, Byoung Hun So¹, Min-ji Kang¹, Hoyoun Kim¹, Didi Zhang¹, Youn Ju Kim^{2,4}, Ho-Young Lee³, Je Kyung Seong^{2,4}, Wook Song^{1,5}
¹Health and Exercise Science Laboratory, Institute of Sport Science, Seoul National University, Seoul, ²Laboratory of Developmental Biology and Genomics, Institute of Veterinary Science, and BK21 Program for Veterinary Science, College of Veterinary Medicine, Seoul National University, Seoul, ³Department of Nuclear Medicine, Seoul National University Bundang Hospital, Seung-Nam, ⁴Korea Mouse Phenotyping Center (KMPC), Seoul National University, Seoul, ⁵Institute on Aging, Seoul National University, Seoul, Korea
- S 95** P5-02 VEGF-A expressing adipose tissue shows rapid beiging, enhanced survival after transplantation and confers IL4-independent metabolic improvements
Min Kim¹, Jiyoung Park², Philipp Scherer³, Jin Han¹
¹National Research Laboratory for Mitochondrial Signaling, Department of Physiology, College of Medicine, Inje University, Cardiovascular and Metabolic Disease Center, Inje University, Busan, ²Department of Biological Sciences, School of Life Sciences, Ulsan National Institute of Science and Technology, Ulsan, Korea, ³Touchstone Diabetes Center, Departments of Internal Medicine and Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX 75390, USA
- S 95** P5-03 Toxicological evaluation of dithiocarbamate fungicide mancozeb in vivo
Hye Yeon Park¹, Seung Hee Choi¹, Nara Kim¹, Hwa-Kyoung Chung¹, Seong-Chun Kwon¹, Daeho Kwon², Jae Seok Song³, Byong-Gon Park¹
¹Department of Physiology, ²Microbiology, ³Preventive Medicine, College of Medicine, Catholic Kwandong University, Korea
- S 96** P5-04 Effects of exercise training on muscle damage, muscle fatigue, and mitochondrial function in atorvastatin-treated rat skeletal muscles
Jun-Won Heo^{1,2}, Mi-Hyun No^{1,2}, Su-Sie Yoo^{1,2}, Jae-Ho Yang^{1,2}, Dong-Ho Park^{1,2}, Ju-Hee Kang^{2,3}, Dae-Yun Seo⁴, Jin Han⁴, Chang-Ju Kim⁵, Hyo-Bum Kwak^{1,2,*}
¹Department of Kinesiology, ²WCSL, ³Department of Pharmacology and Medicinal Toxicology Research Center, Inha University, ⁴National Research Laboratory for Mitochondrial Signaling, Department of Physiology, Department of Health Sciences and Technology, BK21 Project Team, Cardiovascular and Metabolic Disease Center, Inje University College of Medicine, ⁵Department of Physiology, Kyung Hee University School of Medicine
- S 96** P5-05 The effects of neuroimmune cytokines and neurotrophins by exercise in aging rats
Nayoung Ahn¹, Kijin Kim¹, Changhyun Lim², Changkeun Kim²
¹Keimyung University, ²Korea National Sport University
- S 96** P5-06 Effects of exercise on cardiac contractility in mouse heart
Tae Hee Koh, Jubert Marquez, Hyoung Kyu Kim, Ji Min Park, Young Deok Seo, Su-Bin Song, Ja Eun Ahn, Hyun Jin Ahn, Chanbo Eun, Jin Han, Jae Boum Youm
Department of Physiology, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University
- S 97** P5-07 The body weight difference between dual energy X-ray absorptiometry and multi-frequency bioelectrical impedance analysis attenuates the equivalence of the body composition assessment
Duong Duc Pham¹, Seung Ku Lee³, Chol Shin^{2,3,*}, Nan Hee Kim⁴, Chae Hun Leem^{1,*}
¹Department of Physiology, Ulsan College of Medicine, ²Division of Pulmonary, Sleep, and Critical Care Medicine, Department of Internal Medicine, Korea University Ansan Hospital, ³Institute of Human Genomic study, Korea University Ansan, ⁴Division of Endocrinology, Sleep, Korea University Ansan Hospital
- S 97** P5-08 Effects of combined treatment of chiropractic and isometric exercise on static balance and dynamic balance in subject of cervical alignment
Il-Yong Park, Jae-Ho Khil
Department of Sports Medicine, Kyung Hee University College of Physical Education
- S 97** P5-09 Exercise training improves erectile function in aged rat
Dae Yun Seo¹, Sung Ryul Lee¹, Hyo Bum Kwak², Hyuntea Park³, Hyun Seok Bang⁴, Kyo Won Seo¹, Yeon Hee Noh¹, Kang-Moon Song⁵, Ji-Kan Ryu⁵, Kyung Soo Ko¹, Byoung Doo Rhee¹, Jin Han^{1,*}
¹National Research Laboratory for Mitochondrial Signaling, Department of Physiology, Department of Health Sciences and Technology, BK21 Plus Project Team, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, ²Department of Kinesiology, Inha University, Incheon, ³Department of Health Care and Science, Dong-A University, Busan, ⁴Department of Physical Education, College of Health, Social Welfare and Education, Tong Myong University, Busan, ⁵National Research Center for Sexual Medicine, Department of Urology, Inha University School of Medicine, Incheon, Korea
- S 98** P5-10 Effects of exercise training on serum level of sclerostin in breast cancer survivors
Jae Seung Chang^{1,2}, Tae-ho Kim^{1,2}, In Deok Kong^{1,2}
¹Department of Physiology, Yonsei University Wonju College of Medicine, ²Yonsei institute of Sports Science & Exercise Medicine, Yonsei University

P6: Diet, Phytochemicals

- S 98** P6-01 *Spirodela polyrhiza* and its chemical constituents vitexin exert anti-allergic effects via ORA1 channel inhibition
Yu-Ran Nam^{1,2}, Hyun Jong Kim^{1,2}, Joo Hyun Nam^{1,2}
¹Department of Physiology, Dongguk University College of Medicine, Gyeongju, ²Channelopathy Research Center (CRC), Dongguk University College of Medicine, Goyang, Gyeonggi-do, Korea

- S 98** P6-02 *Spirodela polyrrhiza* extract and its flavonoid luteolin inhibit Cl^- secretion in human airway epithelial cells via the calcium-dependent Cl^- channel anoctamin-1
Hyun Jong Kim^{1,2}, Yu-Ran Nam^{1,2}, Joo Hyun Nam^{1,2}
¹Department of Physiology, Dongguk University College of Medicine, Gyeongju, ²Channelopathy Research Center (CRC), Dongguk University College of Medicine, Goyang, Gyeonggi-do, Korea
- S 99** P6-03 Acceleration of skin barrier restoration by Korean herbs via transient receptor potential V3
Yu-Ran Nam^{1,2}, Woo Kyung Kim^{2,3}, Joo Hyun Nam^{1,2}
¹Department of Physiology, Dongguk University College of Medicine, Gyeongju, ²Channelopathy Research Center (CRC), Dongguk University College of Medicine, Goyang, Gyeonggi-do, ³Department of Internal Medicine, Graduate School of Medicine, Dongguk University, Goyang, Gyeonggi-do, Korea
- S 99** P6-04 Systems-level mechanisms of action of *Panax ginseng*: a network pharmacological approach
Sa-Yoon Park¹, Ji-Hun Park¹, Hyo-Su Kim¹, Choong-Yeol Lee¹, Hae-Jeung Lee², Ki Sung Kang^{3*}, Chang-Eop Kim^{1*}
¹Department of Physiology, College of Korean Medicine, Gachon University, ²Department of Food and Nutrition, College of BioNano Technology, Gachon University, ³Department of Preventive Medicine, College of Korean Medicine, Gachon University
- S 99** P6-05 Sargacromenol D from *Sargassum siliquastrum* as a novel selective L-type Ca^{2+} channel blocker
Won-Chul Cho¹, Hwa-Kyoung Chung², Nara Kim², Seong-Chun Kwon², Woon-Seob Shin³, Seokjoon Lee⁴, Byong-Gon Park²
¹Department of Thoracic and Cardiovascular Surgery, Gangneung Asan Hospital, Ulsan University College of Medicine, Gangneung, ²Department of Physiology, ³Microbiology, ⁴Pharmacology, College of Medicine, Catholic Kwandong University, Korea
- S 100** P6-06 Novel synthetic antihypertensive agents from the marine naturo-mimetics
Nara Kim¹, Hwa-Kyoung Chung¹, Seong-Chun Kwon¹, Woon-Seob Shin², Seokjoon Lee³, Byong-Gon Park¹
¹Department of Physiology, ²Microbiology, ³Pharmacology, College of Medicine, Catholic Kwandong University, Korea
- S 100** P6-07 Symptom regulating effects of *Quisqualis indica* linn in benign prostatic hyperplasia rat model
Dae-geon Kim¹, Joo-heon Kim^{1,2}, Kyu-pil Lee³
¹Department of Veterinary Physiology, College of Veterinary Medicine, Gyeongsang National University, Jinju, ²Institute of Animal Medicine, College of Veterinary Medicine, Gyeongsang National University, Jinju, ³Department of Veterinary Physiology, College of Veterinary Medicine, Chungnam National University, Daejeon, Korea
- S 100** P6-08 Echinochrome A increase the mass and function of the mitochondria by upregulation of mitochondria biogenesis genes
Joon Yong Noh, Seung Hun Jeong, Hyoung Kyu Kim, Yeon Hee Noh, Jubert Marquez, Kyung Soo Ko, Byoung Doo Rhee, Nari Kim, Jin Han
National Research Laboratory for Mitochondrial Signaling, Department of Physiology, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea
- S 100** P6-09 HS1793 compound activates PGC-1 α via AKT/mTOR signaling and improves mitochondrial biogenesis and function in mouse skeletal muscle cell model
Jubert Marquez, Jin Han[#]
Department of Physiology, BK21 Plus Project Team, Cardiovascular and Metabolic Disease Center, College of Medicine, Inje University, Busan, Korea
- S 101** P6-10 *Polygoni avicularis* (*polygonum aviculare* L.) improves diabetic nephropathy in db/db mice
Ji Hun Park^{1,2}, Hye Yoom Kim^{1,2}, So Young Eun^{1,2}, Byung Hyuk Han^{1,2}, Eun Sik Choi^{1,2}, Yun Jung Lee^{1,2}, Ho Sub Lee^{1,2}, Dae Gill Kang^{1,2*}
¹Hanbang Cardio-Renal Syndrome Research Center, ²College of Oriental Medicine and Professional Graduate School of Oriental Medicine, Wonkwang University, Iksan, Jeonbuk, Korea
- S 101** P6-11 Ojeoksan suppressed TNF- α -induced vascular inflammation in human umbilical vein endothelial cells
Byung Hyuk Han^{1,2}, You Mee Ahn^{1,2}, So Young Eun^{1,2}, Ji Hun Park^{1,2}, Chan Ok Son^{1,2}, Yun Jung Lee^{1,2}, Dae Gill Kang^{1,2}, Ho Sub Lee^{1,2*}
¹Hanbang Cardio-Renal Syndrome Research Center, ²College of Oriental Medicine and Professional Graduate School of Oriental Medicine, Wonkwang University, Iksan, Jeonbuk, Korea
- S 101** P6-12 *Dianthus superbus* attenuates angiotensin II-induced glomerular fibrosis in human renal mesangial cells
Jung Joo Yoon^{1,2}, Byung Hyuk Han^{1,2}, Ji Hun Park^{1,2}, Da Hye Jeong^{1,2}, Chan Ok Son^{1,2}, Yun Jung Lee^{1,2}, Ho Sub Lee^{1,2}, Dae Gill Kang^{1,2*}
¹Hanbang Cardio-Renal Syndrome Research Center, ²College of Oriental Medicine and Professional Graduate School of Oriental Medicine, Wonkwang University, Iksan, Jeonbuk, Korea
- S 102** P6-13 Korean red ginseng ameliorates high fat/high cholesterol diet-induced hypertriglyceridemia and endothelial dysfunction
Hye Yoom Kim^{1,2}, Xian Jun Jin^{1,2}, Mi Hyeon Hong^{2,3}, Seon Mi Ko⁴, Seung Mi Hwang⁴, Dong joong Im⁴, You Mee Ahn^{1,2}, Hyun Ju Kim¹, Ho Sub Lee^{1,2}, Dae Gill Kang^{1,2}, Yun Jung Lee^{1,2*}
¹Hanbang Cardio-Renal Syndrome Research Center, ²College of Oriental Medicine and Professional Graduate School of Oriental Medicine, ³Department of Convergence Technology for Food Industry, Wonkwang University, Iksan, Jeonbuk, ⁴Institute of Jinan Red Ginseng, Jinan-gun, Jeonbuk, Korea

- S 102 P6-14** *Chrysanthemum boreale* makino essential oil and its single compound sabinene alleviates starvation-induced atrophy in L6 cells
Yunkyoung Ryu¹, Long Cui¹, Seung Hyo Jung¹, Suji Baek¹, Kang Pa Lee¹, Junghwan Kim², Kyung Jong Won¹, Bokyung Kim¹
¹Department of Physiology, School of Medicine, Konkuk University, Chungju, ²Department of Physical Therapy, College of Public Health & Welfare, Yonjin University, Yonjin, Korea
- S 102 P6-15** *Flos Magnoliae* and its chemical constituents modulates Cl⁻ secretion via ANO1 Cl⁻ channel inhibition in human airway epithelial cells
Hyun Jong Kim^{1,2}, Yu-Ran Nam^{1,2}, Yung Kyu Kim¹, Joo Hyun Nam^{1,2}
¹Department of Physiology, Dongguk University College of Medicine, Gyeongju, ²Channelopathy Research Center (CRC), Dongguk University College of Medicine, Goyang, Gyeonggi-do, Korea
- P7: Other Areas**
- S 102 P7-01 (PO-B-07)** Mesothelial cells demarcate the subunits of organ surface primo vascular tissue
Chae Jeong Lim¹, Yeo Sung Yoon², So Yeong Lee¹, Pan Dong Ryu¹
Departments of ¹Veterinary Pharmacology and ²Anatomy & Cell Biology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, Korea
- S 103 P7-02** Sex difference of feeding behavior and gastrointestinal function in response to stress in rat
Min Seob Kim, Yong Sung Kim, Han-Seung Ryu, Suck Chei Choi, Mi-sung Park, Seong Hoon Park, Joong Goo Kwon, Moon Young Lee
Wonkwang University, Korea, Iksan, Catholic University of Daegu
- S 103 P7-03** The effects of aerobic circulation on the body composition of obese men consuming LCHF
Uichol Kwon
Kongju National University
- S 103 P7-04** Necrox-5 exerts anti-inflammation and regulates mitochondrial biogenesis in hypoxia-reoxygenation (HR) treated rat hearts
Nguyen Thi Tuyet Anh¹, H. K. Kim¹, T. T. Vu^{1,2}, S. R. Lee¹, J. Marquez¹, N. Kim¹, K. S. Ko¹, B. D. Rhee¹, J. Han¹
¹National Research Laboratory for Mitochondrial Signaling, Cardiovascular and Metabolic Disease Center, Department of Medicine, BK21 Project Team, Department of Physiology, Inje University, Busan, Korea, ²VNU University of Science, Hanoi, Vietnam
- S 104 P7-05** ¹H-NMR-based metabolomic studies of bisphenol A in zebrafish (Danio rerio)
Changshin Yoon^{1,2}, Dahye Yoon¹, Junghee Cho¹, Siwon Kim¹, Heonho Lee¹, Hyeonsoo Choi¹, Suhkman Kim¹
¹Department of Chemistry, Center for Proteome Biophysics and Chemistry Institute for Functional Materials, Pusan National University, Busan, ²National Research Laboratory for Mitochondrial Signaling, Department of Physiology, College of Medicine, Cardiovascular and Metabolic Disease Center, Inje University, Korea
- S 104 P7-06** Morphological changes in organ surface primo vascular tissue in the rats with anemia
Yiming Shen, Chae Jeong Lim, So Yeong Lee, Pan Dong Ryu
Department of Veterinary Pharmacology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, Korea
- S 104 P7-07** Histological features of the hyaluronic acid-rich tissue in subcutaneous layer of rat abdomen
Chae Jeong Lim, So Yeong Lee, Pan Dong Ryu
Department of Veterinary Pharmacology, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, Korea
- S 104 P7-08** Sea hare hydrolysates induce M1 macrophage polarization
In-Seok Jang¹, Marie Merci Nyiramana^{2,3}, Ji Hyeon Ryu³, Eun-Jin Kim³, Adrian S. Siregar^{2,3}, Hyun Jae Nam⁴, Chang Hyun Lee⁴, Jae Seok Lee³, James Hong⁵, Si-Hyang Park⁶, Yeung Joon Choi⁷, Min-Kyoung Shin⁸, Jaehee Han^{2,3}, Dawon Kang^{2,3}
¹Department of Thoracic and Cardiovascular Surgery, Gyeongsang National University Hospital, Jinju, ²Department of Convergence Medical Science, Gyeongsang National University, Jinju, ³Department of Physiology, College of Medicine, Gyeongsang National University, Jinju, ⁴Departments of Premedicine and Medicine, College of Medicine, Gyeongsang National University, Jinju, Korea, ⁵Mounds View High School, 1900 Lake Valentine Rd, Arden Hills, MN 55112, USA, ⁶Sunmarin Biotech, Tongyeong, ⁷Department of Seafood Science and Technology and Institute of Marine Industry, Gyeongsang National University, Tongyeong, ⁸Department of Microbiology, College of Medicine, Gyeongsang National University, Jinju, Korea
- S 105 P7-09** The monosodium iodoacetate (MIA) injection into intervertebral disc of rat accelerate disc degeneration
Hye Rim Suh, Eui Ho Park, Sun Wook Moon, Hee Chul Han
Department of Physiology, College of Medicine and Neuroscience Research Institute, Korea University, Seoul, Korea
- S 105 P7-10** Typing individual breast cancer patients using genomic modules activated in normal breast tissue
Hye Young Kim^{1,2}, Jin Hyuk Kim¹
¹Department of Physiology, ²Institute of Medical Science, Hanyang University, Seoul, Korea
- S 105 P7-11** Adipose-derived stem cells enhance phagocytic activity of peripheral blood mononuclear cells in a rat model of atopic dermatitis
Jaehee Lee¹, Leejin Park², Hyeoung Kim¹, Bong-il Rho², Rafael Taeho Han¹, Seung Keun Back³, Heung Sik Na¹
¹Neuroscience Research Institute and Department of Physiology, Korea University College of Medicine, Seoul, ²Glovi Plastic Surgery Clinic, ³Department of Pharmaceutics & Biotechnology, College of Medicine Engineering, Konyang University, Chungnam, Korea

- S 106** P7-12 Expression of interleukin-33 induced by inflammatory cytokines in mouse macrophages
Jeongyeon Choi, Hyoweon Bang
Department of Physiology, College of Medicine, Chung-Ang University
- S 106** P7-13 Brain function (effects of physical exercise and calorie restriction)
Yi Sub Kwak
Department of Physical Education, Dong-Eui University, Busan, Korea