

Revision of differential diagnosis of hypocalcemia and diagnostic criteria of hypoparathyroidism

Chairs: Daisuke Inoue (Third Department of Medicine, Teikyo University Chiba Medical Center)

Takuo Kubota (Department of Pediatrics, Osaka University Graduate School of Medicine)

SY1-1 Nationwide survey of pseudohypoparathyroidism, related diseases, and nonsurgical hypoparathyroidism

Rieko Takatani¹, Takuo Kubota², Masanori Minagawa³, Daisuke Inoue⁴, Seiji Fukumoto⁵, Noriyuki Namba⁶, Keiichi Ozono², Yosikazu Nakamura⁷

(Center for Preventive Medical Sciences, Chiba University¹, Department of Pediatrics, Osaka University Graduate School of Medicine², Division of Endocrinology, Chiba Children's Hospital³, Third Department of Medicine, Teikyo University Chiba Medical Center⁴, Tamaki-Aozora Hospital⁵, Division of Pediatrics and Perinatology, Department of Multidisciplinary Internal Medicine, School of Medicine, Faculty of Medicine, Tottori University⁶, Division of Public Health, Center for Community Medicine, Jichi Medical University⁷)

SY1-2 Genetics and differential diagnosis of hypoparathyroidism

Noriyuki Namba¹, Rieko Takatani², Takuo Kubota³, Masanori Minagawa⁴, Daisuke Inoue⁵, Seiji Fukumoto⁶, Keiichi Ozono³

(Division of Pediatrics and Perinatology, Faculty of Medicine, Tottori University¹, Center for Preventive Medical Sciences, Chiba University², Department of Pediatrics, Osaka University Graduate School of Medicine³, Division of Endocrinology, Chiba Children's Hospital⁴, Third Department of Medicine, Teikyo University Chiba Medical Center⁵, Tamaki Aozora Hospital⁶)

SY1-3 Types and diagnosis of pseudohypoparathyroidism and its related disorders

Seiji Fukumoto¹, Rieko Takatani², Takuo Kubota³, Masanori Minagawa⁴, Daisuke Inoue⁵, Noriyuki Namba⁶, Keiichi Ozono³

(Tamaki-Aozora Hospital)

SY1-4 Disorders of vitamin D metabolism

Takuo Kubota¹, Rieko Takatani², Masanori Minagawa³, Daisuke Inoue⁴, Seiji Fukumoto⁵, Noriyuki Namba⁶, Keiichi Ozono¹

(Department of Pediatrics, Osaka University Graduate School of Medicine¹, Center for Preventive Medical Sciences, Chiba University², Department of Endocrinology, Chiba Children's Hospital³, Third Department of Medicine, Teikyo University Chiba Medical Center⁴, Tamaki Aozora Hospital⁵, Division of Pediatrics and Perinatology, Tottori University Faculty of Medicine⁶)

SY1-5 Differential diagnosis of hypocalcemia

Daisuke Inoue¹, Rieko Takatani², Takuo Kubota³, Masanori Minagawa⁴, Seiji Fukumoto⁵, Noriyuki Namba⁶, Keiichi Ozono³

(Third Department of Medicine, Teikyo University Chiba Medical Center¹, Center for Preventive Medical Sciences, Chiba University², Department of Pediatrics, Osaka University Graduate School of Medicine³, Division of Endocrinology, Chiba Children's Hospital⁴, Tamaki Aozora Hospital⁵, Division of Pediatrics and Perinatology, Tottori University Faculty of Medicine⁶)

Rising Stars in Skeletal Biology

Chairs: Masaru Ishii (Department of Immunology and Cell Biology, Graduate School of Medicine, Osaka University)

Yuuki Imai (Proteo-Science Center, Ehime University)

JCS3-1 UHRF1 orchestrates several pathogeneses in rheumatoid arthritis

Noritaka Saeki^{1,2}, Kazuki Inoue³, Maky Ideta-Otsuka⁴, Kunihiko Watamori⁵, Shinichi Mizuki⁶, Katsuto Takenaka⁷, Katsuhide Igarashi^{8,9}, Hiromasa Miura¹⁰, Shu Takeda¹¹, Yuuki Imai^{2,12}

(Division of Medical Research Support, Advanced Research Support Center, Ehime University¹, Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University², Nankai International Advanced Research Institute, Nankai University³, Laboratory of Instrumental Analysis, School of Pharmacy and Pharmaceutical Sciences, Hoshi University⁴, Department of Joint Reconstruction, Graduate School of Medicine, Ehime University⁵, The Center for Rheumatic Diseases, Matsuyama Red Cross Hospital⁶, Department of Hematology, Clinical Immunology and Infectious Diseases, Ehime University Graduate School of Medicine⁷, Laboratory of Biofunctional Science, School of Pharmacy and Pharmaceutical Sciences, Hoshi University⁸, Institute for Advanced Life Sciences, Hoshi University⁹, Department of Bone and Joint Surgery, Ehime University Graduate School of Medicine¹⁰, Division of Endocrinology, Toranomon Hospital Endocrine Center¹¹, Department of Pathophysiology, Ehime University Graduate School of Medicine¹²)

JCS3-2 Runx2 and Runx3 differentially regulate articular chondrocytes during surgically induced osteoarthritis development

Kosei Nagata¹, Taku Saito¹, Hironori Hojo², Fumiko Yano³, Hiroyuki Okada², Shinsuke Ohba⁴, Chung Uung-il², Sakae Tanaka¹

(Department of Orthopaedic Surgery Faculty of Medicine, The University of Tokyo¹, The Center for Disease Biology and Integrative Medicine, The University of Tokyo², Department of Biochemistry, School of Dentistry, Showa University³, Department of Tissue and Developmental Biology, Graduate School of Dentistry, Osaka University⁴)

JCS3-3 Tendons affect physical performance via mechano-transduction

Ryo Nakamichi^{1,2}, Hiroshi Asahara²

(Department of Orthopaedic Surgery, Okayama University¹, Department of Systems BioMedicine, Tokyo Medical and Dental University²)

JCS3-4 Non-canonical Semaphorin 4D signaling pathway induces cartilage destruction

Tomohiko Murakami

(Department of Molecular and Cellular Biochemistry, Osaka University Graduate School of Dentistry)

Luncheon Seminar 1 12:20-13:20

Chair: Satoshi Soen (Soen Orthopaedics, Osteoporosis and Rheumatology Clinic)

LS1 Management of glucocorticoid - induced osteoporosis

Yoshiya Tanaka

(The First Department of Internal Medicine, School of Medicine University of Occupational and Environmental Health, Japan)

Co-sponsored by DAIICHI SANKYO CO.,LTD.

Symposium 4 14:40-16:10

Bone destruction and pathogenesis of rheumatoid arthritis: Japan College of Rheumatology

Chairs: Yoshiya Tanaka (The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan)

Hiroshi Takayanagi (Department of Immunology, Graduate School of Medicine, The University of Tokyo)

SY4-1 Parsing synovial pathology related to treatment resistance in Japanese rheumatoid arthritis patients by single-cell analysis

Keishi Fujio¹, Risa Yoshihara¹, Haruka Tsuchiya¹, Yasunori Omata², Sakae Tanaka²
(Department of Allergy and Rheumatology, Graduate School of Medicine, The University of Tokyo¹, Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo²)

SY4-2 The immune-stromal-bone network in autoimmune arthritis

Noriko Komatsu
(Department of Immunology Graduate School of Medicine and Faculty of Medicine The University of Tokyo)

SY4-3 Evaluation of bone destruction in rheumatoid arthritis by HR-pQCT

Ko Chiba, Kazuteru Shiraishi, Kounosuke Watanabe, Makoto Osaki
(Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences)

SY4-4 Treatments targeting joint joint destruction in patients with rheumatoid arthritis

Yoshiya Tanaka
(The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan)

Symposium 5 16:20-17:50

Recent progress in the reseach on rickets/osteomalacia and associated disorder

Chairs: Toshimi Michigami (Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital)

Nobuaki Ito (Division of Nephrology and Endocrinology, The University of Tokyo Hospital/Osteoporosis Center, The University of Tokyo Hospital)

SY5-1 Advances in research on X-linked hypophosphatemic rickets and osteomalacia

Takuo Kubota
(Department of Pediatrics, Osaka University Graduate School of Medicine)

SY5-2 Research on pathophysiology and differential diagnosis of acquired FGF23-related hypophosphatemic disease

Naoko Hidaka^{1,2}, Hajime Kato^{1,2}, Yoshitomo Hoshino^{1,2}, Soichiro Kimura^{1,2}, Takashi Sunouchi^{1,2}, Sou Watanabe^{1,2}, Minae Koga^{1,2}, Nobuaki Ito^{1,2}
(Department of Nephrology and Endocrinology, The University of Tokyo Hospital¹, Osteoporosis Center, The University of Tokyo Hospital²)

SY5-3 Establishment of systematic dental management for patients with skeletal disease

Rena Okawa
(Department of Pediatric Dentistry, Osaka University Graduate School of Dentistry)

JCS1-1 Yasuhiro Kobayashi
(Division of Hard Tissue Research, Institute for Oral Science, Matsumoto Dental University)

JCS1-2 Daisuke Inoue
(Division of Endocrinology and Metabolism, Third Department of Internal Medicine, Teikyo University Chiba Medical Center)

Symposium 2 09:00-10:30

Reviewed once again! Bone quality in terms of bone matrix

Chairs: Mitsuru Saito (Department of Orthopedic Surgery, Jikei University School of Medicine)

Norio Amizuka (Developmental Biology of Hard Tissue, Faculty of Dental Medicine, Hokkaido University)

SY2-1 The Science of Bone Maturation and Aging

Mitsuru Saito
(Department of Orthopaedic Surgery, Jikei University School of Medicine)

SY2-2 Bone quality and bone matrix data obtained using infrared and Raman spectroscopy

Hiromi Kimura-Suda¹, Teppei Ito², Yuya Kanehira², Fumiya Nakamura³, Hideyo Horiuchi³, Tomomi Masuya³, Chihiro Kawamoto³

(Department of Applied Chemistry and Bioscience, Chitose Institute of Science and Technology¹, Graduate School of Photonics Science, Chitose Institute of Science and Technology², Graduate School of Science and Technology, Chitose Institute of Science and Technology³)

SY2-3 Bone matrix orientation as a bone quality parameter and the role of osteocalcin

Takayoshi Nakano
(Biomaterials & Structural Materials Design Area, Graduate School of Engineering, Osaka University)

SY2-4 Maintenance of bone quality by osteocyte network

Tomoka Hasegawa, Norio Amizuka
(Developmental Biology of Hard Tissue, Faculty of Dental Medicine, Hokkaido University)

Symposium 3 10:40-12:10

Frontiers of Bone&Cartilage Biology and Oral Science Research

Chairs: Riko Nishimura (Department of Molecular & Cellular Biochemistry)
Eijiro Jimi (Oral Health/Brain Health/Total Health Research Center, Faculty of Dental Science, Kyushu University)

SY3-1 A new approach to dentin regeneration

Takashi Yamashiro
(Department of Orthodontics and Dentofacial Orthopedics, Graduate School of Dentistry, Osaka University)

SY3-2 Epigenetic regulation and chromatin dynamics in chondrocyte gene expression

Kenji Hata, Riko Nishimura, Yoshifumi Takahata, Tomohiko Murakami, Riko Nishimura
(The Department of Biochemistry, Osaka University)

SY3-3 Vascular-microenvironment network in cancer and infectious diseases

Kyoko Hida
(Vascular Biology and Molecular Biology, Hokkaido University Faculty of Dental Medicine)

SY3-4 Development of three-dimensional culture models of salivary glands

Kenji Mishima
(Division of Pathology, Department of Oral Diagnostic Sciences, Showa University School of Dentistry)

Luncheon Seminar 2 12:20-13:20

Chair: Naoto Endo (Tsubame Rosai Hospital)

LS2-1 Striving toward better care for patients with rickets and osteomalacia ; The role of pediatricians

Takuo Kubota
(Department of Pediatrics, Osaka University Graduate School of Medicine)

LS2-2 Striving toward better care for patients with rickets and osteomalacia ; The role of physicians

Yasuo Imanishi
(Department of Metabolism, Endocrinology and Molecular Medicine, Osaka Metropolitan University Graduate School of Medicine)

Co-sponsored by Kyowa Kirin Co.,Ltd.

Future Planning Committee Program Selection Outstanding Abstracts 14:40-16:10

JSBMR Young Investigator Award Session

Chairs: Riko Nishimura (Department of Molecular & Cellular Biochemistry Osaka University Graduate School of Dentistry)
Masakazu Terauchi (Department of Women's Health, Tokyo Medical and Dental University)

JCA-1 Loss of the phosphatase Ctdnep1 in the tendon and periosteum causes osteochondroma

Takuto Konno^{1,2,3,4,5,6}, Chisato Sampei¹, Yasuhiro Arasaki¹, Takashi Nakamura², Shigeaki Kato³, Yoshinori Asou⁴, Yoichi Ezura^{5,6}, Tadayoshi Hayata¹

(Department of Molecular Pharmacology, Graduate School of Pharmaceutical Science, Tokyo University of Science¹, Department of Biochemistry, Tokyo Dental College², Graduate School of Life Science and Engineering, Iryo Sosei University³, Department of Orthopaedic Surgery, Graduate School, Tokyo Medical and Dental University⁴, Department of Occupational Therapy, Faculty of Health and Medical Science, Teikyo Heisei University⁵, Department of Joint Surgery and Sports Medicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University⁶)

JCA-2 Estrogen receptor-alpha signaling in synovial macrophages promotes inflammatory arthritis through the regulation of cellular metabolism

Noritaka Saeki^{1,2}, Yuuki Imai^{2,3}

(Division of Medical Research Support, Advanced Research Support Center, Ehime University¹, Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University², Department of Pathophysiology, Ehime University Graduate School of Medicine³)

JCA-3 Gprc5a is a gene induced by PTH and suppresses the proliferation and differentiation of osteoblasts.

Chisato Sampei¹, Yasuhiro Arasaki¹, Takuto Konno¹, Masaki Noda², Yoichi Ezura^{3,4}, Tadayoshi Hayata¹

(Department of Molecular Pharmacology, Graduate School of Pharmaceutical Science, Tokyo University of Science¹, Center for Stem Cell and Regenerative Medicine, Tokyo Medical and Dental University², Department of Occupational Therapy, Faculty of Health and Medical Science, Teikyo Heisei University³, Department of Joint Surgery and Sports Medicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University⁴)

JCA-4 Novel anti-Nuclear factor-kappa B peptide derived from nuclear acidic protein attenuates ovariectomy-induced osteoporosis in mice

Kenji Takami¹, Yuki Etani², Makoto Hirao³, Akira Miyama⁴, Gensuke Okamura⁵, Taihei Miura², Yuji Fukuda², Kosuke Ebina^{2,6}

(Department of Orthopaedic Surgery, Nippon Life Hospital¹, Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine², Department of Orthopaedic Surgery, National Hospital Organization Osaka Minami Medical Center³, Department of Orthopaedic Surgery, National Hospital Organization Osaka Toneyama Medical Center⁴, Department of Orthopaedic Surgery, Osaka Rosai Hospital⁵, Department of Musculoskeletal Regenerative Medicine, Osaka University Graduate School of Medicine⁶)

JCA-5 Complications and correlations of bone, joint, and muscle diseases in hip joint -The ROAD study-

Toshiko Iidaka¹, Chiaki Horii², Shigeyuki Muraki¹, Kozo Nakamura³, Toru Akune⁴, Sakae Tanaka², Noriko Yoshimura¹

(Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo¹, Department of Orthopaedic Surgery, Faculty of Medicine, University of Tokyo², Towa Hospital³, National Rehabilitation Center for Persons with Disabilities⁴)

JCA-6 Steroid profiling in patients with adrenal Cushing's syndrome and its implication in bone mass and quality

Maki Yokomoto-Umakoshi^{1,2}, Yoshihiro Ogawa¹

(Department of Medicine and Bioregulatory Science, Graduate School of Medical Sciences, Kyushu University)

JCA-7 Age-related normative values of bone microarchitecture scores in older Japanese: the Bunkyo Health Study.

Hikaru Otsuka, Hiroki Tabata, Yoshifumi Tamura

(Graduate School of Medicine, Juntendo University)

JCA-8 Three cases of suspected vitamin D dependent osteomalacia

Soichiro Kimura^{1,2}, Takashi Sunouchi^{1,2}, Yoshitomo Hoshino^{1,2}, Naoko Hidaka^{1,2}, Hajime Kato^{1,2}, Taku Saito^{2,3}, Nobuaki Ito^{1,2}

(Division of Nephrology and Endocrinology, University of Tokyo Hospital¹, Osteoporosis Center, University of Tokyo Hospital², Orthopaedic Surgery and Spinal Surgery, University of Tokyo Hospital³)

Study for bone and cartilage regeneration using cells and biomaterials

Chairs: Takayoshi Nakano (Biomaterials & Structural Materials Design Area, Graduate School of Engineering, Osaka University)

Noriyuki Tsumaki (Department of Biochemistry and Molecular Biology Graduate School of Medicine, Osaka University)

SY6-1 Regeneration therapy to treat fracture nonunion: Transplantation of autologous peripheral blood CD34-positive cells

Ryosuke Kuroda

(Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine)

SY6-2 Bone regeneration enhancement and new function expression by controlling the structure and shape of carbonate apatite artificial bone

Koichiro Hayashi

(Faculty of Dental Science, Kyushu University)

SY6-3 Regeneration of vertebral bone via metal 3D printing based on preferential alignment of bone matrix

Takayoshi Nakano

(Biomaterials & Structural Materials Design Area, Graduate School of Engineering, Osaka University)

SY6-4 Repair of articular cartilage via implantation of mesenchymal stem cells optimized with a nanofiber-structured material in cartilage defect of rats

Kaoru Yamagata¹, Shingo Nakayamada¹, Masahiro Kondo², Yoshiya Tanaka¹

(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan)

SY6-5 Allogeneic iPS cell-derived cartilage engraftment and function in a primate model of articular cartilage defect

Kengo Abe, Akihiro Yamashita, Noriyuki Tsumaki

(Department of Tissue Biochemistry, Graduate School of Medicine, Osaka University)

Muscles, Tendons, and Ligaments Adorning Bones

Chairs: Hiroshi Asahara (Department of Systems BioMedicine, Tokyo Medical and Dental University / Scripps Research)

Satoshi Inoue (Department of Systems Aging Science and Medicine, Tokyo Metropolitan Institute of Geriatrics and Gerontology)

JCS2-1 The formation, maintenance, and age-related degeneration of neuromuscular junctions (NMJs) and NMJ-targeted therapies

Yuji Yamanashi

(Division of Genetics, The Institute of Medical Science, The University of Tokyo)

JCS2-2 Regulatory progenitor during tendon regeneration

Taku Saito

(Orthopedic Surgery, The University of Tokyo)

JCS2-3 Maintenance DNA methylation in skeletal muscle regeneration

Yuuki Imai^{1,2}

(Proteo-Science Center, Ehime University¹, Ehime University Graduate School of Medicine²)

JCS2-4 Bone and Joint health organized by tendon and ligament

Hiroshi Asahara^{1,2}

(Department of Systems BioMedicine, Tokyo Medical and Dental University¹, Scripps Research²)

JCS2-5 Mitochondrial respiratory supercomplexes in muscle function

Satoshi Inoue

(Systems Aging Science and Medicine, TMIG)

Educational Lecture 1 11:10-12:10

Chair: Haruhiko Akiyama (Department of Orthopaedics, Gifu University)

EL1 Bone matrix orientation as a bone quality parameter and development of bone device based on it

Takayoshi Nakano

(Biomaterials & Structural Materials Design Area, Graduate School of Engineering, Osaka University)

Luncheon Seminar 3 12:20-13:20

Chair: Masayoshi Harigai (Division of Rheumatology, Department of Internal Medicine, Tokyo Women's Medical University School of Medicine)

LS3 Position of molecular-targeted drugs in treatment strategies for rheumatoid arthritis

Sakae Tanaka

(Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)

Co-sponsored by AbbVie GK

Educational Lecture 2 13:30-14:30

Chair: Akihiro Yasoda (Clinical Research Institute, National Hospital Organization
Kyoto Medical Center)

EL2 Diagnosis and therapy of skeletal dysplasia

Keiichi Ozono

(Department of Pediatrics, Osaka University)

Educational Lecture 3 14:40-15:40

Chair: Tomoki Nakashima (Tokyo Medical and Dental University)

EL3 Frontiers in live bone imaging

Masaru Ishii

(Department of Immunology and Cell Biology, Graduate School of Medicine, Osaka University)

Educational Lecture 4 15:50-16:50

Chair: Hiroshi Asahara (Department of Systems BioMedicine, Tokyo Medical and
Dental University)

EL4 Genome analysis of locomotive diseases- present and future

Shiro Ikegawa

(Lab. Statistical and Translation Genetics, IMS, RIKEN/ Japanese Skeletal Dysplasia Consortium)

Future Planning Committee Meet the Expert (How to write or review scientific papers)

16:50-17:50

MTE1 Writing and reviewing an English paper

Takeshi Miyamoto

(Department of Orthopaedic Surgery, Kumamoto University)

Chairs: Noriyuki Tsumaki (Department of Biochemistry and Molecular Biology, Graduate School of Medicine, Osaka University)
Kenji Hata (Department of Biochemistry, Osaka University Graduate School of Dentistry)

O1-1 Dnmt1 regulates chondrocyte differentiation through energy metabolism

Yuta Yanagihara¹, Masatomo Takahashi², Yoshihiro Izumi², Takeshi Bamba², Yuuki Imai¹
(Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University¹, Division of Metabolomics, Mass Spectrometry Center, Medical Research Center for High Depth Omics, Medical Institute of Bioregulation, Kyushu University²)

O1-2 Functional roles of Sclerostin in the fibrocartilaginous enthesis

Shinsei Yambe¹, Yuki Yoshimoto², Xinyi Yu¹, Haruhiko Akiyama³, Taiji Adachi⁴, Chisa Shukunami¹
(Department of Molecular Biology and Biochemistry, Graduate School of Biomedical & Health Sciences, Hiroshima University¹, Molecular Craniofacial Embryology, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University², Department of Orthopaedic Surgery, Division of Disease Control, Graduate School of Medicine, Gifu University³, Department of Biomechanics, Institute for Frontier Medical Sciences, Kyoto University⁴)

O1-3 Molecular mechanism underlying skeletal sex difference regulated by Utx

Yuta Yanagihara¹, Wataru Kitamura², Yuuki Imai^{1,2}
(Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University¹, Department of Pathophysiology, Ehime University Graduate School of Medicine²)

O1-4 CCN2 regulates chondrocyte differentiation by binding to GDF5 and its receptor

Naohiro Higashihara^{1,2}, Eriko Aoyama¹, Satoshi Kubota³, Toshifumi Ozaki², Masaharu Takigawa¹
(Advanced research center for oral and craniofacial sciences, Okayama University¹, Department of orthopaedic surgery, Okayama university², Department of biochemistry and molecular dentistry, Okayama university³)

Chairs: Yuko Sakamoto (Dept of Orthop Juntendo Univ Nerima Hosp)
Kousuke Iba (Department of Musculoskeletal Anti-aging Medicine)

O2-1 Osteoporotic fracture prediction in 3 years using OSTA

Chiaki Horii¹, Toshiko Iidaka¹, Masayuki Iki², Saeko Fujiwara³, Noriko Yoshimura¹, Sakae Tanaka⁴
(Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical and Research Center, The University of Tokyo Hospital¹, Department of Public Health, Kindai University², Faculty of Pharmacy, Yasuda Women's University³, Department of Orthopaedics, the University of Tokyo Hospital⁴)

O2-2 Identification of prominent factors associated with hip fractures by machine learning

Masaru Uragami, Takeshi Miyamoto
(The Department of Orthopedic Surgery, Kumamoto University)

O2-3 Transcriptome analysis of osteal macrophages identifies therapeutic target cell subset for treatment of menopausal osteoporosis

Alaa Terukawa, Yoshio Nishida, Norimasa Iwasaki

(Department of Orthopedic Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University)

O2-4 AI-assisted diagnostic system for osteoporosis using the X-ray images

Toru Moro^{1,2,3}, Taku Saito^{2,4}, Hiroyuki Oka^{2,5}, Takeyuki Tanaka^{2,5}, Kumiko Ohno^{2,4}, Hisatoshi Ishikura², Toshiko Iidaka^{2,6}, Shin Asai², Naoto Kaminaga², Nobuaki Ito⁷, Masahiko Tanabe⁸, Keishi Fujio⁹, Sumito Ogawa¹⁰, Noriko Yoshimura⁶, Sakae Tanaka²

(Division of Science for Joint Reconstruction, Graduate School of Medicine, The University of Tokyo¹, Orthopaedic Surgery, Sensory and Motor System Medicine, Surgical Sciences, Graduate School of Medicine, The University of Tokyo², Next Generation Artificial Intelligence Research Center, The University of Tokyo³, Osteoporosis Center, The University of Tokyo Hospital⁴, Division of Musculoskeletal AI System Development, Graduate School of Medicine, The University of Tokyo⁵, Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo⁶, Division of Nephrology and Endocrinology, The University of Tokyo Hospital⁷, Department of Gastrointestinal Surgery/Brest and Endocrine Surgery, Graduate School of Medicine, The University of Tokyo⁸, Department of Allergy and Rheumatology, Graduate School of Medicine, The University of Tokyo⁹, Department of Geriatric Medicine, Graduate School of Medicine, The University of Tokyo¹⁰)

O2-5 A cross-sectional predictive evaluation of the new vertebral bone fractures in peri and postmenopausal women, a preliminary study

Takehisa Yamamoto

(Department of Pediatrics. Minoh City hospital)

O2-6 Sex Differences in the Effects of Combined Food Restriction and Running Exercise on Bone in Young Rats

Kazuki Kioka¹, Naomi Omi^{1,2}

(Laboratory of Exercise and Sports Nutrition, Graduate School of Comprehensive Human Sciences, University of Tsukuba¹, Faculty of Health and Sport Sciences, University of Tsukuba²)

Oral Presentation 3 13:30-14:20

Osteoclast 1

Chairs: Tadahiro Iimura (Department of Pharmacology, Faculty and Graduate School of Dental Medicine, Hokkaido University)

Masamichi Takami (Department of Pharmacology, School of Dentistry, Showa University)

O3-1 Elucidation of the differentiation pathway of arthritis-associated osteoclastogenic macrophages by single-cell RNA sequencing

Agemura Tomoya^{1,2}, Kikuta Junichi¹, Ishii Masaru¹

(Department of Immunology and Cell Biology, Graduate School of Medicine and Frontier Biosciences, Osaka university¹, Research Fellow of Japan Society for Promotion of Science²)

O3-2 Mechanism of excessive bone resorption after discontinuation of anti-RANKL antibody

Hotaka Ishizu¹, Tomohiro Shimizu¹, Tomoka Hasegawa², Norio Amizuka², Norimasa Iwasaki¹

(Department of Orthopaedic Surgery, Faculty of Medicine and Graduate School of Medicine, Hokkaido University¹, Department of Developmental Biology of Hard Tissue, Graduate School of Dental Medicine, Hokkaido University²)

O3-3 The transition of hematopoiesis from fetal to bone marrow; identification of osteoclasts that contribute to the continuous "hematopoietic waves"

Yasuhito Yahara^{1,2}, Masaru Ishii¹

(WPI-Immunology Frontier Research Center, Osaka University¹, Department of Immunology and Cell Biology, Osaka University²)

O3-4 Regulation of osteoclastogenesis by T1R3 Taste Receptor

Anna Yoshimura^{1,2}, Takuma Matsubara¹, Nao Kodama¹, Addison William¹,

Tatsuo Kawamoto², Shoichiro Kokabu¹

(Division of Molecular Signaling and Biochemistry, Kyushu Dental University¹, Division of Orofacial and Functional Orthodontics, Kyushu Dental University²)

O3-5 Spatiotemporal analysis of the effect of antiresorptive drugs on bone remodeling using an in vitro reconstitution system

Sayaka Ono¹, Shuya Oguchi², Naoki Tsuji¹, Takashi Nakamura³, Kazuto Hoshi^{1,2,4},

Atsuhiko Hikita⁴

(Department of Sensory and Motor System Medicine, Graduate School of Medicine, The University of Tokyo¹, Department of Oral-Maxillofacial Surgery, and Orthodontics, The University of Tokyo Hospital², Department of Biochemistry, Tokyo Dental College³, Department of Tissue Engineering, The University of Tokyo Hospital⁴)

Oral Presentation 4 14:20-15:00

Osteoclast 2

Chairs: Toshihide Mizoguchi (Oral Health Science Center, Tokyo Dental College)
Nobuyuki Udagawa (Department of Biochemistry)

O4-1 Male mice lacking Bub1 in myeloid cell exhibit trabecular bone loss

Shuhei Yoshida¹, Noritaka Saeki^{2,3}, Aoi Ikedo², Yuta Yanagihara², Yuuki Imai^{1,2}

(Department of Pathophysiology, Graduate School of Medicine, Ehime University¹, Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University², Division of Medical Research Support, Ehime University³)

O4-2 Suppression of osteoclast function by epigenetic regulator G9a

Hisashi Ideno¹, Koichiro Komatsu¹, Kazuhisa Nakashima¹, Yasuhiro Kobayashi²,

Nobuyuki Udagawa³, Teruhito Yamashita²

(Department of Pharmacology, Tsurumi University School of Dental Medicine¹, Institute for Oral Science, Matsumoto Dental University², Department of Biochemistry, School of Dentistry, Matsumoto Dental University³)

O4-3 Three-dimensional structural analysis of osteoclasts using correlation light-electron microscopy (CLEM) and Focused Ion Beam Scanning Electron Microscope (FIB-SEM)

Masahiro Hosonuma^{1,2,3}, Nobuhiro Sakai^{2,4,5}, Hideki Matsushima⁶, Jyunichi Kikuta⁷,
Takashi Takaki⁸, Akira Takebe⁹, Masaru Ishii⁷, Masamichi Takami^{2,5}

(Division of Medical Pharmacology, Department of Pharmacology, Showa University School of Medicine¹, Pharmacological Research Center, Showa University², Division of Medical Oncology, Department of Medicine, Showa University School of Medicine³, Department of Dental Education, School of Dentistry, Showa University⁴, Department of Pharmacology, Showa University School of Dentistry⁵, Japan Electron Optics Laboratory Ltd.⁶, Department of Immunology and Cell Biology, Osaka University Graduate School of Medicine⁷, Section of Electron Microscopy in Showa University⁸, JEOL-Nikon CLEM Solution Center⁹)

O4-4 Deletion of the metallothionein 3 in bone marrow-derived macrophage reduces the intracellular zinc²⁺ level and regulates the ROS via the NRF2 pathway, affecting osteoclast survival and differentiation

Shinkichi Arisumi¹, Toshifumi Fujiwara¹, Keitaro Yasumoto¹, Tomoko Tsutsui¹,
Yasuharu Nakashima¹, Haibo Zhao²

(The Department of Orthopedic Surgery, Kyushu University Hospital¹, Center for Osteoporosis and Metabolic Bone Diseases, University of Arkansas for Medical Sciences²)

Oral Presentation 5 15:10-16:10

Disorders in mineral metabolism

Chairs: Shu Takeda (Seiseki clinic)

Reiko Inoue (Division of Endocrinology & Metabolism, Third Department of
Medicine, Teikyo University Chiba Medical Center)

O5-1 How does OPG limit vascular calcification?

Yutaro Ando^{1,2,3}, Masayuki Tsukasaki⁴, Akira Yamaguchi³, Kazuyuki Ishihara^{2,3},
Hiroshi Takayanagi¹

(Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo¹, Department of Microbiology, Tokyo Dental College², Oral Health Science Center, Tokyo Dental College³, Department of Osteoimmunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo⁴)

O5-2 Efficacy and Safety of TransCon PTH in Japanese Adults with Hypoparathyroidism: 26-Week Results of the PaTHway Japan Trial

Kenji Ashida¹, Masatoshi Nomura¹, Noriko Makita², Yasuo Imanishi³, Naotetsu Kanamoto⁴,
Xuebei An⁵, Lisbet Groes⁶, Susanne Pihl⁶, Christopher T. Sibley⁵, Jenny Ukena⁵, Bryant Lai⁵,
Aimee D. Shu⁵, Yasuhiro Takeuchi⁷

(Division of Endocrinology and Metabolism, Department of Internal Medicine, Kurume University Hospital, Fukuoka, Japan¹, Division of Nephrology and Endocrinology, University of Tokyo Hospital, Tokyo, Japan², Department of Metabolism, Endocrinology and Molecular Medicine, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan³, Department of Endocrinology, Osaka City General Hospital, Osaka, Japan⁴, Ascendis Pharma Inc, Palo Alto, CA, USA⁵, Ascendis Pharma A/S, Hellerup, Denmark⁶, Department of Endocrinology and Metabolism, Toranomon Hospital, Tokyo Japan and Okinaka Memorial Institute for Medical Research, Tokyo, Japan⁷)

O5-3 The vitamin D receptor in osteoblastic cells but not secreted parathyroid hormone is crucial for soft tissue calcification induced by the proresorptive activity of 1,25(OH)₂D₃

Yuko Nakamichi^{1,2}, Ziyang Liu², Zhifeng He¹, Hisataka Yasuda³, Naoyuki Takahashi^{1,2},
Nobuyuki Udagawa^{1,2,4}

(Institute for Oral Science, Matsumoto Dental University¹, Graduate School of Dentistry, Matsumoto Dental University², Oriental Yeast Co., Ltd.³, Department of Biochemistry, School of Dentistry, Matsumoto Dental University⁴)

O5-4 Vitamin D calcium-independent improvement of bone traits by adult chicken bone factor

Tamao Nishiura^{1,2}, Hitoki Yamanaka³, Ritsuko Masuyama¹

(Ritsumeikan University Graduate School of Gastronomy Management¹, Marudai Food Co., Ltd.², Shinshu University Research Center for Advanced Science and Technology³)

O5-5 Gut protection by dietary flavonoids reduces bone fragility formation in chronic kidney disease rats.

Yoshiko Iwasaki^{1,2}, Hideyuki Yamato³, Masafui Fukagawa³

(Department of Health Sciences, Nippon Bunri University¹, Department of Health Sciences, Oita University of Nursing and Health Sciences², Division of Nephrology, Endocrinology and Metabolism, Tokai University School of Medicine³)

O5-6 Serum 25(OH)-Vitamin D Deficiency unveiled by a Fully Automated LC-MS/MS System -A Survey of 5518 Japanese Aged 10-90 Years

Shoutaro Arakawa¹, Sae Ochi^{2,3}, Tomokazu Matsuura^{2,3}, Daisuke Kawakami⁴, Nobuhiro Hanafusa⁴, Mitsuru Saito¹

(Department of Orthopaedic Surgery, The Jikei University School of Medicine¹, Department of Laboratory Medicine, The Jikei University School of Medicine², Department of Central Clinical Laboratory, The Jikei University School of Medicine³, Analytical and Measuring Instruments Division, Shimadzu Corporation⁴)

Oral Presentation 6 16:10-17:20

Muscle and sarcopenia

Chairs: Ritsuko Masuyama (Ritsumeikan University)

Sumito Ogawa (Department of Geriatric Medicine Graduate School of Medicine, The University of Tokyo)

O6-1 Role of mesenchymal progenitor cells in muscle regeneration after muscle injury

Masaki Yoda¹, Yoshiyuki Takahashi¹, Takahide Tohmonda², Mika Imamura¹, Osahiko Tsuji¹, Masaya Nakamura¹

(Department of Orthopaedic Surgery, Keio University School of Medicine¹, Department of Human Health and Nutrition, College of Human Health and Nutrition, Shokei Gakuin University²)

O6-2 Role of plasminogen in unloading-induced muscle atrophy

Takashi Ohira¹, Yoko Ino², Naoyuki Kawao¹, Yuya Mizukami¹, Kiyotaka Okada¹, Osamu Matsuo¹, Hisashi Hirano², Yayoi Kimura², Hiroshi Kaji¹

(Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine¹, Advanced Medical Research Center, Yokohama City University²)

O6-3 Vitamin D-dependent ATP metabolism controls calcium accumulation in skeletal muscle in mice

Risako Mori¹, Hitoki Yamanaka², Ritsuko Masuyama¹

(Graduate School of Gastronomy Management, Ritsumeikan University¹, Research Center for Advanced Science and Technology, Shinshu University²)

O6-4 Time-course analysis of altered atrophic gene expression in disuse muscle atrophy

Tsukasa Tominari¹, Masaru Takatoya², Daichi Arai², Michiko Hirata², Yoshitsugu Aoki¹, Masaki Inada²

(Department of Molecular Therapy, National Institute of Neuroscience, National Center of Neurology and Psychiatry¹, Department of Biotechnology and Life Science, Tokyoku University of Agriculture and Technology²)

O6-5 Incidence rate of Sarcopenia and its association of osteoporosis in Japanese men and women -The ROAD study-

Toshiko Iidaka¹, Chiaki Horii², Shigeyuki Muraki¹, Kozo Nakamura³, Toru Akune⁴, Sakae Tanaka², Noriko Yoshimura¹

(Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo¹, Department of Orthopaedic Surgery, Faculty of Medicine, University of Tokyo², Towa Hospital³, National Rehabilitation Center for Persons with Disabilities⁴)

O6-6 Search for novel myokines common to primary and secondary sarcopenia in mice.

Yusuke Masuda^{1,2}, Hiroki Tawaratsumida¹, Tomohiro Iuchi¹, Toshiro Ijuin^{1,3}, Shingo Maeda⁴, Noboru Taniguchi^{1,2,3,4}

(Department of Orthopaedic Surgery, Kagoshima University)

O6-7 Association between musculoskeletal disorders and physical activity in COPD mice

Takayuki Nabeshima¹, Manabu Tsukamoto¹, Yosuke Mano¹, Daisuke Arakawa¹, Ke-Yong Wang², Takafumi Tajima¹, Yoshiaki Yamanaka¹, Eiichiro Nakamura¹, Kagaku Azuma³, Akinori Sakai¹

(Department of Orthopaedic Surgery, School of Medicine, University of Occupational and Environmental Health¹, Shared-Use Research Center, School of Medicine, University of Occupational and Environmental Health², Department of Anatomy, School of Medicine, University of Occupational and Environmental Health³)

Bone metabolism in the context of organ network

Chairs: Daisuke Inoue (Division of Endocrinology and Metabolism, Third Department of Internal Medicine, Teikyo University Chiba Medical Center)
Yoshiya Tanaka (The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan)

SY7-1 The possibility of improving the health of whole body through invigoration of bone and muscle

Takehito Ono

(Department of Cell Signaling, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU))

SY7-2 Vitamin D and glucose metabolism

Yosuke Okada¹, Yoshiya Tanaka²

(Clinical Research Center, Hospital of the University of Occupational and Environmental Health, Japan¹, First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan²)

SY7-3 COPD-associated osteoporosis

Reiko Inoue, Daisuke Inoue

(Third Department of Medicine, Teikyo University Chiba Medical Center)

SY7-4 Clinical significance of osteosarcopenia in patients with cirrhosis

Chisato Saeki^{1,2,3}, Mitsuru Saito², Akihito Tsubota³

(Division of Gastroenterology and Hepatology, Department of Internal Medicine, The Jikei University School of Medicine¹, Department of Orthopedic Surgery, The Jikei University School of Medicine², Project Research Units, Research Center for Medical Science, The Jikei University School of Medicine³)

SY7-5 Senso-immunology

Kenta Maruyama

(National Institute for Physiological Sciences)

Invited Lecture 1 11:00-12:00

Chair: Seiji Fukumoto (Tamaki-Aozora Hospital)

IL1 New roles for G-CSF and neutrophils in controlling bone structure

Natalie A Sims

(St. Vincent's Institute of Medical Research and The University of Melbourne, Australia)

Luncheon Seminar 4 12:10-13:10

Chair: Haruhiko Akiyama (Department of Orthopaedic Surgery, Tokai National Higher Education and Research System Gifu University)

LS4 Molecular mechanisms underlying osteoporosis pathogenesis and therapy

Yuuki Imai

(Proteo-Science Center, Ehime University)

Co-sponsored by ASAHI KASEI PHARMA CORPORATION

JSBMR General Meeting Award Lectures 14:20-15:50

Chairs: Seiji Fukumoto (Tamakiazora Hospital)
Yasuhiro Takeuchi (Toranomom Hospital)

Symposium 9 16:00-17:30

Anabolic therapy for patients with osteoporosis: Japan Osteoporosis Society Joint Symposium

Chairs: Seiji Fukumoto (Tamaki-Aozora Hospital)
Hiroshi Hagino (School of Health Science)

SY9-1 Clinical efficacy and characteristics of teriparatide

Daisuke Inoue

(Third Department of Medicine, Teikyo University Chiba Medical Center)

SY9-2 Romosozumab

Kosuke Ebina¹, Yuki Etani¹, Ken Nakata², Seiji Okada¹

(Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine¹, Department of Health and Sport Sciences, Osaka University Graduate School of Medicine²)

SY9-3 Treatment of osteoporosis using abaloparatide

Toshio Matsumoto

(Tokushima University)

Evening Seminar 17:40-18:40

Chair: Daisuke Inoue (Third Department of medicine, Teikyo University Chiba Medical Center)

ES Update on osteoporosis treatment

Jun Iwamoto

(Keiyu Orthopaedic Hospital)

Co-sponsored by CHUGAI PHARMACEUTICAL CO.,LTD.

Wnt Biology: from bench to bedside

Chairs: Toshio Matsumoto (Tokushima University)
Yasuhiro Kobayashi (Division of Hard Tissue Research, Institute for Oral
Science, Matsumoto Dental University)

SY8-1 Introduction

Yasuhiro Kobayashi
(Division of Hard Tissue Research, Institute for Oral Science, Matsumoto Dental University)

SY8-2 Roles of RSPO2 and RSPO2-positive progenitor in tendon regeneration and OPLL

Taku Saito
(Orthopaedic Surgery, The University of Tokyo)

SY8-3 Regulation of osteogenesis and systemic adipogenesis by interleukin-11 via wnt signaling

Masahiro Hiasa
(Department of Orthodontics and Dentofacial Orthopedics, Tokushima University Graduate School
of Biomedical Sciences)

SY8-4 Regulatory mechanisms of SOST expression in bone modeling and remodeling

Masanori Koide¹, Nobuyuki Udagawa^{1,2}
(Division of Hard Tissue Research, Institute for Oral Science, Matsumoto Dental University¹,
Department of Biochemistry, Matsumoto Dental University²)

SY8-5 Therapeutic use of anti-sclerostin antibodies for the treatment of osteoporosis

Kosuke Ebina^{1,2}, Yuki Etani², Seiji Okada², Ken Nakata³
(Department of Musculoskeletal Regenerative Medicine, Osaka University Graduate School of
Medicine¹, Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine²,
Department of Health and Sport Sciences, Osaka University Graduate School of Medicine³)

SY8-6 Summary

Toshio Matsumoto
(Tokushima University)

Luncheon Seminar 5 12:10-13:10

Chair: Sakae Tanaka (Department of Orthopedic Surgery, Faculty of Medicine, The
University of Tokyo)

LS5 New Era of Active Vitamin D₃

Takeshi Miyamoto
(Department of Orthopedic Surgery, Faculty of Life Sciences, Kumamoto University)

Co-sponsored by TOWA PHARMACEUTICAL CO.,LTD. / CHUGAI PHARMACEUTICAL CO., LTD.

Regulation of mechanical force in locomotive organ

Chairs: Tomoki Nakashima (Department of Cell Signaling, Tokyo Medical and Dental University)

Yasuhiro Sawada (Department of Clinical Research, National Rehabilitation Center for Persons with Disabilities)

SY10-1 Regulatory mechanisms of cartilage tissue development and homeostasis in the RNA hierarchy and their therapeutic applications

Hiroshi Asahara^{1,2}

(Department of System BioMedicine, Tokyo Medical and Dental University¹, Scripps Research²)

SY10-2 Roles of mechanotransducer, YAP/TAZ, in muscle regeneration and hypertrophy

So-ichiro Fukada

(Graduate School of Pharmaceutical Sciences, Osaka University)

SY10-3 Implication of cell stretching in mechano-sensing by bone

Yasuhiro Sawada

(National Rehabilitation Center for Persons with Disabilities)

Chairs: Yuuki Imai (Proteo-Science Center, Ehime University)
Kenji Hata (The Department of Biochemistry, Osaka University)

JSY-1 Catecholamine-independent neural pathways drive the rapid catabolism of bone marrow adipose tissues

Xiao Zhang^{1,2}, Anurag Majumdar¹, Brian Kleiboeker³, Kristann L Magee¹, Brian S Learman⁴, Steven A Thomas⁵, Irfan J Lodhi³, Ormond A MacDougald⁴, Erica L Scheller^{1,2}

(Division of Bone and Mineral Diseases, Washington University School of Medicine, St. Louis, MO, USA¹, Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, MO, USA², Division of Endocrinology, Metabolism & Lipid Research, Washington University School of Medicine, St. Louis, MO, USA³, Department of Molecular & Integrative Physiology, University of Michigan, Ann Arbor, MI, USA⁴, Department of Pharmacology, University of Pennsylvania, Philadelphia, PA, USA⁵)

JSY-2 Identifying novel bone forming cells within the skeleton

Natalie Wee
(St Vincent's Institute of Medical Research)

JSY-3 How muscles shape the postnatal skeleton

Alex Ireland
(Musculoskeletal Science and Sports Medicine Research Centre, Department of Life Sciences, Manchester Metropolitan University, Manchester, UK)

JSY-4 Emerging gene regulatory networks in skeletal development in the mouse and human models

Hironori Hojo
(Center for Disease Biology and Integrative Medicine, The University of Tokyo)

Chair: Tsuyoshi Isojima (Department of Pediatrics, Toranomon Hospital)

LS6 Osteocytes controlling bone strength: sclerostin and more!

Natalie A Sims
(St. Vincent's Institute of Medical Research and The University of Melbourne, Australia)

Co-sponsored by Amgen K.K. Medical Affairs / Astellas Pharma Inc. Medical Affairs

Oral Presentation 10 16:00-16:40

Rheumatoid arthritis and osteoarthritis

Chairs: Yuki Nanke (Institute of Rheumatology, Tokyo Women's Medical University)
Jun Hashimoto (Division of Rheumatology, National Hospital Organization,
Osaka Minami Medical Center)

O10-1 Comparison of bone structure between weight-bearing and non-weight-bearing bone in patients with rheumatoid arthritis -Investigation using HR-pQCT and 3D-SHAPER-

Ikuko Tanaka¹, Takashi Kato², Motokazu Kai³, Kunikazu Ogawa³, Hisaji Oshima⁴,
Shigenori Tamaki¹

(Nagoya Rheumatology Clinic¹, Department of Radiology, National Center for Geriatrics and Gerontology², Mie Rheumatology Clinic³, Department of connective tissue disease, Tokyo Medical Center⁴)

O10-2 Do biological/ targeted synthetic disease modifying anti rheumatic drugs interrupt bone mineral density-reduction in patients with rheumatoid arthritis?: findings from a 694 patients multi-center prospective observational study

Koshiro Sonomoto^{1,2}, Naoaki Ohkubo², Kentaro Hanami², Shunsuke Fukuyo^{2,3},
Yusuke Miyazaki², Kenichi Tanaka², Yosuke Okada², Yoshiya Tanaka²

(Department of Clinical Nursing, School of Health Sciences, University of Occupational and Environmental Health, Japan¹, The first department of internal medicine, School of medicine, University of Occupational and Environmental Health, Japan², Wakamatsu Hospital of the University of the Occupational and Environmental Health, Japan³)

O10-3 Long-term analysis of bone turnover markers in rheumatoid arthritis patients

Yu Yamashita^{1,2}, Kazuhiro Maeda^{1,2}, Takuya Otani^{1,2}, Mitsuru Saito²

(Department of Orthopaedic Surgery, The Jikei University DAISAN Hospital¹, Department of Orthopaedic Surgery, The Jikei University School of Medicine²)

O10-4 Knockdown of mechanosensitive adaptor Hic-5 ameliorates post-traumatic osteoarthritis in rats

Aya Miyauchi, Momoko Tanabe, Joo-ri Kim-kaneyama

(Department of Biochemistry, Showa University School of Medicine)

Oral Presentation 11 16:40-17:30

Cancer-related bone diseases

Chairs: Masaki Inada (Department of Biotechnology and Life Science, Tokyo
University of Agriculture and Technology)

Kazuo Okamoto (Department of Osteoimmunology, Graduate School of
Medicine and Faculty of Medicine, The University of Tokyo)

O11-1 Periosteal defense against tumor progression

Kazutaka Nakamura^{1,2}, Masayuki Tsukasaka³, Kazuto Hoshi², Hiroshi Takayanagi¹

(Department of Immunology Graduate School of Medicine and Faculty of Medicine, The University of Tokyo¹, Department of Sensory and Motor System Medicine, Graduate School of Medicine, The University of Tokyo², Department of Osteoimmunology Graduate School of Medicine and Faculty of Medicine, The University of Tokyo³)

O11-2 Membrane-bound TGF- α on prostate cancer cells promotes prostaglandin E2-mediated bone formation

Moe Sugasaki¹, Kento Karouji¹, Shosei Yoshinouchi¹, Michiko Hirata², Masaki Inada^{1,2}

(Cooperative Major in Advanced Health Science, Tokyo University of Agriculture and Technology¹, Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology²)

O11-3 Production of soluble SLAMF7 in myeloma bone lesions and its sequelae in bone marrow microenvironment

Takeshi Harada¹, Ryohei Sumitani¹, Tomoyo Hara¹, Hirofumi Tenshin², Emiko Nakaue², Yusuke Inoue¹, Masahiro Hiasa², Jumpei Teramachi³, Eiji Tanaka², Itsuro Endo¹, Masahiro Abe¹

(Department of Hematology, Endocrinology and Metabolism, Tokushima University Graduate School of Biomedical Sciences¹, Department of Orthodontics and Dentofacial Orthopedics, Tokushima University Graduate School of Biomedical Sciences², Department of Oral Function and Anatomy, Graduate School of Medicine Dentistry and Pharmaceutical Sciences, Okayama University³)

O11-4 Sclerostin blockade promotes bone metastases of Wnt-responsive breast cancer cells

Toru Hiraga¹, Kanji Horibe¹, Masanori Koide², Teruhito Yamashita², Yasuhiro Kobayashi²

(Department of Histology and Cell Biology, Matsumoto Dental University¹, Institute for Oral Science, Matsumoto Dental University²)

O11-5 Effects of acridine orange and zoledronic acid on renal cell carcinoma local bone metastasis model

Keita Oya, Hiroyuki Tsuchie, Hiroyuki Nagasawa, Yuji Kasukawa, Ryo Shoji, Naohisa Miyakoshi

(Department of Orthopedic Surgery, Akita University Graduate School of Medicine)

Chairs: Kazuto Hoshi (Oral and Maxillofacial Surgery, The University of Tokyo)
Shinsuke Ohba (Department of Tissue and Developmental Biology, Osaka
University Graduate School of Dentistry)

O7-1 Identification of stem cells contributing to bone regeneration in extraction socket

Akihide Tokuyama¹, Shinichirou Ito¹, Masataka Kasahara^{1,2}, Toshihide Mizogushi²
(Department of Pharmacology, Tokyo Dental College¹, Oral Health Science Center, Tokyo Dental
College²)

O7-2 The pathological analysis of hypophosphatasia using human iPS cells-induced odontoblast like cells

Akira Nozoe¹, Kazuaki Miyagawa¹, Chiho Nakano¹, Susumu Tanaka¹, Shinji Takeyari²,
Makoto Fujiwara², Yasuhisa Ohata², Takuo Kubota², Keiichi Ohzono²
(First Department of Oral and Maxillofacial Surgery, Graduate School of Dentistry, Osaka
University¹, Department of Pediatrics, Osaka University Graduate School of Medicine²)

O7-3 Subset of the periodontal ligament expressed leptin receptor contributes to hard tissue-forming cells

Shinichirou Ito¹, Akihide Tokuyama¹, Masataka Kasahara^{1,2}, Toshihide Mizoguchi²
(Department of Pharmacology, Tokyo Dental College¹, Oral Health Science Center, Tokyo Dental
College²)

O7-4 Elucidation of mechanism of lipid metabolism-induced energy production for cytodifferentiation of periodontal ligament cells

Chiharu Fujihara, Shinya Murakami
(Department of Periodontology and Regenerative Dentistry)

Chair: Hiroaki Nakamura (Institute for Oral Science, Matsumoto Dental University)

O8-1 Fibroblast growth factor 18 signaling regulates the development of dental root

Chengxue Jin, Yuki Yoshimoto, Sachiko Iseki
(Department of Craniofacial Embryology and Oral Histology¹, Jilin University, Hospital of
Stomatology, Plastic and Aesthetic Surgery Center²)

O8-2 Spatio-temporal analysis of the pathogenesis of periodontitis: application of the novel mouse ligature model

Anhao Liu^{1,2}, Mikihito Hayashi¹, Sayaka Katagiri², Yujin Ohsugi², Takanori Iwata²,
Tomoki Nakashima¹
(Department of Cell Signaling, Graduate School of Medical and Dental Sciences, Tokyo Medical
and Dental University¹, Department of Periodontology, Graduate School of Medical and Dental
Sciences, Tokyo Medical and Dental University²)

O8-3 AnnexinA5 regulates PDL remodeling through expressions of tissue mineralization regulators

Hisashi Ideno¹, Koichiro Komatsu¹, Kazuhisa Nakashima¹, Yasuo Imanishi², Yoichi Ezura³, Akira Nifuji¹

(Tsurumi University School of Dental Medicine¹, Osaka metropolitan university Graduate school of medicine², Faculty of Health and Medical Sciences, Teikyo Heisei University³)

O8-4 Gli1-positive cells in the periodontal ligament contribute to alveolar bone formation during orthodontic tooth movement

Yuri Seki¹, Mizoguchi Toshihide², Hosoya Akihiro¹

(Division of Histology, Department of Oral Growth and Development, School of Dentistry, Health Sciences University of Hokkaido¹, Oral Health Science Center, Tokyo Dental College²)

Oral Presentation 9 10:20-11:00

Cartilage 2

Chairs: Satoshi Kubota (Department of Biochemistry and Molecular Dentistry, Okayama University Faculty of Medicine, Dentistry and Pharmaceutical Sciences)

Kazunori Imaizumi (Department of Biochemistry, Graduate School of Biomedical and Health Sciences, Hiroshima University)

O9-1 Notch signaling contributes to the homeostasis of the cartilage through the maintenance of the superficial zone cells

Yasuhide Iwanaga¹, Sakae Tanaka², Taku Saito²

(Department of Chemistry & Biotechnology, School of Engineering, The university of Tokyo¹, Department of Orthopaedic Surgery and Spine Surgery, The university of Tokyo²)

O9-2 Exploring the expression and function of CCN2-derived circRNAs in chondrocytes

Soma Kato^{1,2}, Kazumi Kawata¹, Takashi Nishida¹, Tomomi Mizukawa¹, Masaharu Takigawa³, Seiji Iida², Satoshi Kubota¹

(Dept. Oral Biochem Mol Dent, Okayama Univ. Grad. Sch. Med. Dent. Pharm. Sci.¹, Dept. Oral Maxillofac Reconst Surg, Okayama Univ. Grad. Sch. Med. Dent. Pharm. Sci.², ARCOCS, Okayama Univ. Grad. Sch. Med. Dent. Pharm. Sci.³)

O9-3 Systemic administration of anti-oxidant bisphosphonate MPMBP increases cartilage tissue in mandibular condylar cartilage

Mirei Chiba^{1,2}, Aiko Takizawa¹, Yoko Abe^{3,5}, Ellen Oshima^{3,5}, Itaru Mizoguchi^{1,4}, Tetsu Takahashi⁴, Hisashi Shinoda^{3,6}

(Division of Oral Physiology, Graduate School of Dentistry, Tohoku University¹, Center for Environmental Dentistry, Graduate School of Dentistry, Tohoku University², Division of Oral and Maxillofacial Surgery, Graduate School of Dentistry, Tohoku University³, Division of Orthodontics and Dentofacial Orthopedics, Graduate School of Dentistry, Tohoku University⁴, Department of Oral Surgery, Sendai Red Cross Hospital⁵, Department of Oral and Maxillofacial Surgery, Southern Tohoku Research Institute for Neuroscience Southern Tohoku General Hospital⁶)

O9-4 Involvement of CCNs and PDGFRL via the Hippo pathway in biological function in chondrocytes

Kazumi Kawata¹, Eriko Aoyama², Masaharu Takigawa², Satoshi Kubota¹

(Department of Biochemistry & Molecular Dentistry, Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University¹, Advanced research center for oral and craniofacial sciences, Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University²)

Oral Presentation 12 16:00-16:40

Hormones, cytokines and signal transduction 1

Chairs: Itsuro Endo (Department of Bioregulatory Sciences, Tokushima University Graduate School of Biomedical Sciences)

Yuichi Takashi (Department of Endocrinology and Diabetes Mellitus, Fukuoka University School of Medicine)

O12-1 Clarification of the function of estrogen signaling in PDGFR α positive cells for musculoskeletal system

Reina Aoki¹, Aoi Ikedo², Yoshiaki Kamei¹, Yasutsugu Yakada¹, Yuuki Imai²

(Department of Hepato-Pancreatic and Breast Surgery, Ehime University Graduate School of Medicine¹, Division of Integrative Pathophysiology, Proteo-Science Center²)

O12-2 Regulation of male bone mass by Aromatase in adipose Tissue

Aoi Ikedo¹, Michiko Yamashita², Maiko Hoshino³, Minoru Uga⁴, Hiroko Segawa⁴, Seiji Fukumoto⁵, Imai Yuuki¹

(Proteo-Science Center, Ehime University¹, Ehime University Hospital Breast Cancer², Graduate school of agricultural and Life Sciences/Faculty of Agriculture, The University of Tokyo³, Department of Applied Nutrition Institute of Biomedical Sciences Tokushima University Graduate School⁴, Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University⁵)

O12-3 Endothelial cell RANK contributes to age-related bone loss and bone marrow aging

Rina Iwamoto¹, Takumi Takahashi², Zhifeng He¹, Masayoshi Ishida¹, Nobuyuki Udagawa³, Yasuhiro Kobayashi¹

(Institute for Oral Science, Matsumoto Dental University¹, Graduate School of Institute for Oral Science, Matsumoto Dental University², Department of Biochemistry, Matsumoto Dental University³)

O12-4 RANKL controls vascular permeability of bone marrow sinusoids in vivo

Junichi Kikuta, Masaru Ishii

(Department of Immunology and Cell Biology, Graduate School of Medicine, Osaka University)

Oral Presentation 13 16:40-17:20

Hormones, cytokines and signal transduction 2

Chairs: Masahiro Yamamoto (Internal medicine 1, Shimane University Faculty of Medicine)

Maki Umakoshi (Department of Medicine and Bioregulatory Science, Graduate School of Medical Sciences, Kyushu University)

O13-1 Cell differentiation and distribution of Gli1-positive mesenchymal cells after PTH administration in bone

Tomoka Hasegawa¹, Haruhi Maruoka¹, Tomomaya Yamamoto^{1,2}, Hotaka Ishizu^{1,3}, Toshihide Mizoguchi⁴, Akihiro Hosoya⁵, Norio Amizuka¹

(Developmental Biology of Hard Tissue, Faculty of Dental Medicine, Hokkaido University¹, Northern Army Medical Unit, Camp Makomanai, Japan Ground Self-Defense Forces², Department of Orthopedic Surgery, Graduate School of Medicine, Hokkaido University³, Oral Health Science Center, Tokyo Dental College⁴, Division of Histology, Department of Oral Growth and Development, School of Dentistry, Health Sciences University of Hokkaido⁵)

O13-2 Intracellular dimers of ALK2 associated with genetic disorders

Takenobu Katagiri, Sho Tsukamoto, Mai Kuratani

(Division of Biomedical Sciences, Research Center for Genomic Medicine, Saitama Medical University)

O13-3 The functional analysis of the super enhancer region involved in eRNA expression regulated by vitamin D receptors.

Yoshiaki Kanemoto^{1,2,3}, Shigeaki Kato^{1,2,4}

(Graduate School of Life Science and Technology, Iryo Sosei University¹, Research Institute of Innovative Medicine, Tokiwa Foundation², Jyoban hospital, Tokiwa Foundation³, Graduate School of Medicine, Fukushima Medical University⁴)

O13-4 Establishment of ALK2 S330P knock-in mouse which is mimicked human BMP signaling

Sho Tsukamoto, Mai Kuratani, Takenobu Katagiri

(Division of Biomedical Sciences, Research Center for Genomic Medicine, Saitama Medical University)

Day 3 Saturday, July 29 Room 1

Symposium 11 08:30-10:00

The practice of primary hyperparathyroidism (PHPT) based on the coming Japanese guideline for PHPT

Chairs: Noriko Makita (Department of Nephrology and Endocrinology, The University of Tokyo Graduate School of Medicine)
Yasuhiro Takeuchi (Toranomon Hospital)

SY11-1 Primary hyperparathyroidism as a cause of secondary osteoporosis

Atsushi Suzuki
(Department of Endocrinology, Diabetes and Metabolism, Fujita Health University)

SY11-2 Recommendations for surgery in primary hyperparathyroidism and medical management before surgery.

Daisuke Inoue
(Third Department of Medicine, Teikyo University Chiba Medical Center)

SY11-3 Medical treatment for non-surgical primary hyperparathyroidism

Noriko Makita
(Department of Nephrology and Endocrinology, The University of Tokyo Graduate School of Medicine)

Invited Lecture 2 10:00-11:00

Chair: Daisuke Inoue (Third Department of Medicine, Teikyo University Chiba Medical Center)

IL2 Management of obesity: an update

Koutaro Yokote
(Department of Endocrinology, Hematology, Gerontology)

Invited Lecture 3 11:00-12:00

Chair: Yasuhiro Takeuchi (Toranomon Hospital)

IL3 Multiple functions of bone morphogenetic proteins and their relation to disease

Kohei Miyazono^{1,2}
(Department of Applied Pathology, Graduate School of Medicine, The University of Tokyo¹, RIKEN Center for Integrative Medical Sciences²)

Luncheon Seminar 7 12:10-13:10

Chair: Miyauchi Akimitsu (Michauchi Medical Center)

LS7 The development of AI software for diagnosing osteoporosis and fractures using a simple Xp sheet with pharmaceutical approval document & Vitamin D deficiency-type bone deterioration

Mitsuru Saito
(Department of Orthopaedic Surgery, Jikei University School of Medicine)

Co-sponsored by Amgen K.K. / Astellas Pharma Inc.

Chair: Toshimi Michiagmi (Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital)

MTE2 Biological processes that could have been and could not have been clarified by the identification of FGF23

Seiji Fukumoto
(Tamakiazora Hospital)

Symposium 12 14:30-16:00

Revised guidelines for management and treatment of glucocorticoid-induced osteoporosis (steroidal osteoporosis)

Chairs: Yoshiya Tanaka (The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan)
Satoshi Soen (Soen Orthopaedics, Osteoporosis and Rheumatology Clinic)

SY12-1 What are the criteria for starting drug treatment?

Satoshi Soen
(Soen Orthopaedics, Osteoporosis and Rheumatology Clinic)

SY12-2 History and future of the glucocorticoid-induced osteoporosis guideline

Ikuko Tanaka
(Nagoya Rheumatology Clinic)

SY12-3 Are bisphosphonates effective?

Yosuke Okada¹, Yoshiya Tanaka²
(Clinical Research Center, Hospital of the University of Occupational and Environmental Health, Japan¹, First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan²)

SY12-4 Effectiveness of bone anabolic drugs

Sakae Tanaka
(Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)

SY12-5 Prevention and management of glucocorticoid-induced osteoporosis in women of reproductive age

Masakazu Terauchi
(Department of Women's Health, Tokyo Medical and Dental University)

Day 3 Saturday, July 29 Room 2

Morning Seminar 07:30-08:30

**Rare Disease but Well-known as the treatable disease
- Bone specialists should not overlook Hypophosphatasia(HPP) in daily practice**

Chair: Yasuhiro Takeuchi (Toranomon Hospital)

MS-1 Overview of Hypophosphatasia (HPP) -Latest findings and differentiation from similar diseases-

Noriyuki Namba

(Division of Pediatrics and Perinatology, Faculty of Medicine, Tottori University)

MS-2 A male subject with type 2 diabetes diagnosed with adult hypophosphatasia due to recurrent fractures

Reiko Inoue

(Third Department of Medicine, Teikyo University Chiba Medical Center)

Co-sponsored by Alexion Pharma GK

Future Planning Committee Symposium (Surgery) 08:30-10:00

Mechanism of action and clinical efficacy of osteoanabolic agents

Chairs: Sakae Tanaka (Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)

Toshio Matsumoto (Tokushima University)

JCS4-1 In silico analysis on effects of osteoanabolic agents

Young Kwan Kim^{1,2}

(Institute for Life and Medical Sciences, Kyoto University¹, Department of Orthopaedic Surgery, The University of Tokyo²)

JCS4-2 Molecular basis and adverse effect mechanism of PTH

Kazuhiro Kobayashi¹, Osamu Nureki²

(Komaba Institute for Science, The University of Tokyo¹, Department of Biological Sciences, Graduate School of Science, The University of Tokyo²)

JCS4-3 Actions and clinical effectiveness of bone anabolic agents

Toshio Matsumoto

(Tokushima University)

Luncheon Seminar 8 12:10-13:10

Chair: Hiroshi Takayanagi (Department of Immunology, Graduate School of Medicine and Faculty of Medicine The University of Tokyo)

LS8 New Era of JAK Inhibitors: Evidence for Filgotinib

Yoshiya Tanaka

(The first department of internal medicine, School of Medicine, University of Occupational and Environmental Health Japan)

Co-sponsored by Gilead Sciences K.K. / Eisai Co., Ltd.

Chairs: Taku Saito (Orthopaedic Surgery, The University of Tokyo)
Takeshi Miyamoto (Department of Orthopedic Surgery, Kumamoto University)

SY13-1 Synovial omic analysis -Build a better tomorrow for Japanese rheumatoid arthritis patients-

Haruka Tsuchiya

(Department of Allergy and Rheumatology, The University of Tokyo)

SY13-2 Regulation of skeletal muscle by functional connection between hypothalamus and skeletal muscle

Naoki Ito

(Brain-Skeletal Muscle Connection in Aging Project Team, Geroscience Research Center, National Center for Geriatrics and Gerontology)

SY13-3 Subcellular sequencing originated by skeletal biology give insights into new cellular physiology including

Hiroyuki Okada¹, Yuta Terui⁴, Yasunori Omata^{2,5}, Masahide Seki⁶, Shoichiro Tani^{1,2}, Junya Miyahara², Kenta Makabe², Asuka Terashima^{2,5}, Sanshiro Kanazawa⁷, Masahiro Hosonuma⁸, Fumiko Yano⁹, Shoko Onodera¹⁰, Hiroshi Kajiya¹¹, Taku Saito², Yutaka Suzuki¹², Koji Okabe¹¹, Roland Baron³, Sakae Tanaka², Ung-il Chung^{1,13}, Hironori Hojo^{1,13}

(Center for Disease Biology and Integrative Medicine, the University of Tokyo*¹¹, Department of Orthopaedic Surgery, the University of Tokyo², Department of Oral Medicine, Infection, and Immunity, Harvard School of Dental Medicine, Boston³, Single Cell Solution Section, Product Strategy Department, Marketing Center, Life Business HQ, Yokogawa Electric Corporation⁴, Bone and Cartilage Regenerative Medicine, the University of Tokyo Hospital⁵, Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, the University of Tokyo⁶, Department of Oral and Maxillofacial Surgery, Graduate School of Medicine, the University of Tokyo⁷, Department of Clinical Immuno Oncology, Clinical Research Institute for Clinical Pharmacology and Therapeutics & Pharmacological Research Center, Showa University⁸, Department of Biochemistry, Showa University School of Dentistry⁹, Department of Biochemistry, Tokyo Dental College¹⁰, Department of Physiological Science and Molecular Biology, Fukuoka Dental College¹¹, Department of Systems Genomics, Graduate School of Frontier Sciences, the University of Tokyo¹², Department of Bioengineering, Graduate School of Engineering, the University of Tokyo¹³)

SY13-4 Recent trends in spatial transcriptome technologies and its application to cancer genomics

Ayako Suzuki, Junko Zenkoh, Yutaka Suzuki

(Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, The University of Tokyo)

Chairs: Yasato Komatsu (Department of Endocrinology, Kyoto City Hospital)
Mika Yamauchi (Research Institute for Metabolic Bone Diseases, Eikokai Ono Hospital)

O14-1 Effects of chronic obstructive pulmonary disease on muscle and bone in mice with elastase-induced emphysema

Daichi Matsumura¹, Naoyuki Kawao², Takashi Ohira², Yuya Mizukami², Masao Akagi¹, Hiroshi Kaji²

(Department of Orthopaedic Surgery, Kindai University Faculty of Medicine¹, Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine²)

O14-2 Fracture risk in patients on low and middle doses of glucocorticoid medication - NDBJ-OS Study

Masayuki Iki¹, Kenji Fujimori^{2,8}, Nobukazu Okimoto^{3,8}, Shinichi Nakatoh^{4,8}, Junko Tamaki^{5,8}, Shigeyuki Ishii^{6,8}, Sumito Ogawa^{7,8}

(Kindai University Faculty of Medicine¹, Department of Health Administration and Policy, Tohoku University School of Medicine², Okimoto Clinic³, Department of Orthopedic Surgery, Asahi General Hospital⁴, Department of Hygiene and Public Health, Osaka Medical and Pharmaceutical University⁵, Department of Regulatory Science, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences⁶, Department of Geriatric Medicine, Graduate School of Medicine, The University of Tokyo⁷, National Database Japan-Osteoporosis Management Study Group⁸)

O14-3 The relation between switching or adding insulin agents and fracture risks in patients with diabetes mellitus-National Database Japan-Osteoporosis Management (NDBJ-OS) Study

Junko Tamaki^{1,8}, Kenji Fujimori^{2,8}, Shigeyuki Ishii^{3,8}, Sumito Ogawa^{4,8}, Shinichi Nakatoh^{5,8}, Nobukazu Okimoto^{6,8}, Masayuki Iki^{7,8}

(Department of Hygiene and Public Health, Osaka Medical and Pharmaceutical University¹, Department of Health Administration and Policy, Tohoku University School of Medicine², Department of Regulatory Science, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences³, Department of Geriatric Medicine, Graduate School of Medicine, The University of Tokyo⁴, Asahi General Hospital⁵, Okimoto Clinic⁶, Department of Public Health, Kindai University Faculty of Medicine⁷, National Database Japan-Osteoporosis Management (NDBJ-OS) Study Group⁸)

O14-4 Associations of prevalent vertebral fractures and cortical bone geometry of femoral neck in patients with type 2 diabetes mellitus

Masahiro Yamamoto

(Internal Medicine¹, Shimane University Faculty of Medicine)

O14-5 Study of the effect of luseogliflozin on bone microstructure using High-Resolution Peripheral Quantitative Computed Tomography (HR-pQCT) in patients with type 2 diabetes

Riyoko Shigeno¹, Ichiro Horie¹, Norio Abiru³, Ryuji Niimi², Ko Chiba², Makoto Osaki², Atsushi Kawakami¹

(Department of Endocrinology and Metabolism, Nagasaki University Hospital¹, Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences², Midori Clinic, Medical Corporation Ryokufukai³)

O14-6 The Efficiency of Whole Genome analysis for Osteogenesis Imperfecta undiagnosed by Whole Exome analysis

Kenichi Yamamoto^{1,2,3}, Yasuhisa Ohata², Makoto Fujiwara², Shinji Takeyari², Takeshi Ishimi², Chieko Yamada², Hiroyuki Saito², Yukako Nakano², Hirofumi Nakayama^{2,4}, Taichi Kitaoka², Takuo Kubota², Keiichi Ozono²

(Division of Health Science, Osaka University Graduate School of Medicine¹, Department of Pediatrics, Osaka University Graduate School of Medicine², Department of Statistical Genetics, Osaka University Graduate School of Medicine³, First Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry⁴)

Luncheon Seminar 9 12:10-13:10

Chair: Yasuhiro Takeuchi (Toranomon Hospital)

LS9 Progress in Osteoporosis Treatment and Development of Abaloparatide as a New Anabolic Agent

Toshio Matsumoto
(Emeritus Professor, Tokushima University)

Co-sponsored by TEIJIN PHARMA LIMITED / TEIJIN HEALTHCARE LIMITED

JSBMR Research Grant 2021 Report Session 14:30-16:00

Chairs: Norio Amizuka (Department of Developmental Biology of Hard Tissue, Graduate School of Dental Medicine, Hokkaido University)
Sumito Ogawa (Department of Geriatric Medicine Graduate School of Medicine, The University of Tokyo)

JCSR-1 Pathological significance of membrane-bound and soluble forms of RANKL in inflammation-induced bone destruction

Kazuo Okamoto¹, Takuya Sugita², Tatsuo Asano², Hiroshi Takayanagi²
(Department of Osteoimmunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo¹, Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo²)

JCSR-2 Elucidation of the mechanism of how the bone protects the mind

Takehito Ono
(Department of Cell Signaling, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU))

JCSR-3 Study of the pathogenesis of craniotubular dysplasia, Ikegawa type

Long Guo^{1,2}, Shiro Ikegawa¹
(Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences¹, School of Basic Medical Sciences, Xi'an Jiaotong University²)

JCSR-4 Analysis of Sox10-positive cells in the bones

Shingo Komura¹, Atsushi Goto¹, Koki Kato¹, Hiroyuki Tomita², Yasuhiro Yamada³, Haruhiko Akiyama¹
(Department of Orthopaedic Surgery, Gifu University Graduate School of Medicine¹, Department of Tumor Pathology, Gifu University Graduate School of Medicine², Department of Molecular Pathology, Graduate School of Medicine, The University of Tokyo³)

JCSR-5 Intravital dynamics of immature osteoblasts in bone tissues

Akito Morimoto, Hotaka Shigyo, Junichi Kikuta, Masaru Ishii

(Department of Immunology and Cell Biology, Graduate School of Medicine / Faculty of Medicine, Osaka University)

JCSR-6 Comorbidity of bone, joint, and muscle diseases in hip joint and their association with disability -The ROAD study-

Toshiko Iidaka¹, Sakae Tanaka², Noriko Yoshimura¹

(Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo¹, Department of Orthopaedic Surgery, Faculty of Medicine, University of Tokyo²)

JCSR-7 Investigation for Prevention of Subsequent vertebral Fracture after Vertebroplasty for Osteoporotic Vertebral Fracture

Hiroyuki Inose

(Department of Orthopedics, Dokkyo Medical University Saitama Medical Center)

JCSR-8 Regulatory roles of FACIT collagen XII in locomotive tissues

Yayoi Izu

(Department of Veterinay Medicine, Okayama University of Science)

Tendon and ligament

Chairs: Chisa Shukunami (Department of Molecular Biology & Biochemistry, Graduate School of Biomedical & Health Sciences, Hiroshima University)

Taku Saito (Orthopaedic Surgery, The University of Tokyo)

O15-1 Heterogeneity of Scx+/Sox9+ cells that contribute to the formation of chondro-tendinous junction/chondro-ligamentous junction and the effects of Scx deletion on tendogenic, ligamentogenic, and chondrogenic differentiation

Xinyi Yu¹, Yuki Yoshimoto², Shinsei Yambe¹, Haruhiko Akiyama³, Taiji Adachi⁴, Takeshi Imamura⁵, Chisa Shukunami¹

(Department of Molecular Biology and Biochemistry, Institute of Biomedical and Health Sciences, Hiroshima University¹, Department of Molecular Craniofacial Embryology, Division of Maxillofacial and Neck Reconstruction, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University², Department of Orthopaedic Surgery, Division of Disease Control, Graduate School of medicine, Gifu University³, Laboratory of Biomechanics, institute for Life and Medical Sciences, Kyoto University⁴, Department of Molecular Medicine for Pathogenesis, Graduate School of Medicine, Ehime University⁵)

O15-2 Genome information reveals causal relationship between obesity and ossification of the posterior longitudinal ligament of the spine

Yoshinao Koike^{1,2,3}, Masahiko Takahata¹, Tsutomu Endo¹, Norimasa Iwasaki¹, Shiro Ikegawa^{1,2}

(Department of Orthopedic Surgery, Hokkaido University Graduate School of Medicine¹, Laboratory for Bone and Joint Diseases, Center for Integrative Medical Sciences, RIKEN², Laboratory for Statistical and Translational Genetics, Center for Integrative Medical Sciences, RIKEN³)

O15-3 Collagen XII regulates cell migration during tendon regeneration and repair

Kei Fujihara, Taiju Yoneda, Shuhei Kajikawa, Yayoi Izu

(Department of Veterinary Medicine, Okayama University of Science)

O15-4 Retinoic acid receptor agonist inhibits ectopic ossification and promotes Achilles tendon repair

Dilimulati Yimiti¹, Kenta Uchibe³, Chisa Shukunami⁴, Shigeru Miyaki^{1,2}

(Department of Orthopaedic Surgery, Graduate School of Biomedical and Health Sciences, Hiroshima University¹, Medical Center for Translational and Clinical Research, Hiroshima University Hospital², Department of Maxillofacial Anatomy and Neuroscience, Graduate School of Biomedical and Health Sciences, Hiroshima University³, Department of Molecular Biology and Biochemistry, Graduate School of Biomedical and Health Sciences, Hiroshima University⁴)

Rickets/osteomalacia and phosphate metabolism

Chairs: Noriyuki Namba (Division of Pediatrics and Perinatology, Faculty of Medicine, Tottori University)

Nobuaki Ito (Division of Nephrology and Endocrinology/Osteoporosis Center, The University of Tokyo Hospital)

O16-1 Enpp1 regulates bone and phosphorus metabolism in chondrocytes.

Takahiro Arima, Takeshi Miyamoto

(Department of Orthopedic Surgery, University of Kumamoto)

O16-2 Tmem174, a regulator of phosphate transporter prevents hyperphosphatemia

Mizuki Miura^{1,2,3}, Sumire Sasaki¹, Yuji Shiozaki¹, Megumi Koike¹, Minoru Uga¹,
Ayami Higashi¹, Tomoka Hasegawa², Norio Amizuka², Ken-ichi Miyamoto^{1,3},
Hiroko Segawa¹

(Department of Molecular Nutrition, Institute of Biomedical Sciences, Tokushima University Graduate School¹, Department of Developmental Biology of Hard Tissue, Graduate School of Dental Medicine, Hokkaido University², Department of Food Sciences and Human Nutrition, Faculty of Agriculture, Ryukoku University³)

O16-3 Aged senescence-accelerated mouse prone 8 (SAMP8) exhibits osteomalacia-like bone loss

Hiroki Tawaratsumida¹, Yusuke Masuda^{1,2}, Tomohiro Iuchi¹, Toshiro Ijyuin^{1,3},
Shingo Maeda⁴, Noboru Taniguchi^{1,2,3,4}

(Department of Orthopaedic Surgery, Kagoshima University¹, Department of Locomotory Organ regeneration, Kagoshima University², Department of Medical Joint Material, Kagoshima University³, Department of Bone and Joint Medicine, Kagoshima University⁴)

O16-4 Neurofibromatosis type 1 diagnosed after the onset of FGF23-related hypophosphatemic osteomalacia: a case report

Takashi Sunouchi, Soichiro Kimura, Yoshitomo Hoshino, Naoko Hidaka, Hajime Kato,
Nobuaki Ito

(Division of Nephrology and Endocrinology, The University of Tokyo)

O16-5 A study of cases treated with brosumab in our hospital

Takahito Asai¹, Hiroki Yamagami², Yuki Tojima¹, Tomoyo Hara², Yukari Mitsui¹,
Kiyoe Kurahashi³, Asami Okada⁴, Yumiko Kotani⁴, Itsuro Endo⁵

(Department of Endocrinology and Metabolism, Tokushima University Hospital¹, Department of Hematology, Endocrinology and Metabolism, Tokushima University Graduate School of Biomedical Sciences², Department of Community Medicine for Respiratory, Hematology and Metabolism, Tokushima University Graduate School of Biomedical Sciences³, Department of Orthopedics, Tokushima University Graduate School of Biomedical Sciences⁴, Department of Bioregulatory Sciences, Tokushima University Graduate School of Biomedical Sciences⁵)

Oral Presentation 17 13:20-14:20

Osteoblast

Chairs: Akira Nifuji (Department of Pharmacology, Tsurumi University, School of Dental Medicine)

Takenobu Katagiri (Division of Biomedical Sciences, RCGM, Saitama Medical University)

O17-1 Functional role of super-enhancer in human bone marrow-derived mesenchymal stem cells osteogenesis driven by microRNA-3129

Kaoru Yamagata¹, Anh Nguyen Phuong¹, Shingo Nakayamada¹, Shigeaki Kato²,
Yoshiya Tanaka¹

(University of Occupational and Environmental Health, Japan¹, Iryo Sosei University²)

O17-2 Trans-pairing of osteoclasts and osteoblasts facing each other across cortical bone shapes developing long bone to conform to the surrounding tissue morphology

Yukiko Kuroda^{1,2}, Katsuhiro Kawaai¹, Masaki Yoda^{1,3}, Motoharu Tatenuma¹,
Atsushi Momose⁴, Koichi Matsuo¹

(Laboratory of Cell and Tissue Biology, Keio University School of Medicine¹, Laboratory of auditory disorders, National Institute of Sensory Organs, National Hospital Organization Tokyo Medical Center², Department of Orthopaedic Surgery, Keio University School of Medicine³, IMRAM, Tohoku University⁴)

O17-3 A long-ncRNA, RP11-399K21.11, regulates osteogenesis in a Wnt-dependent manner.

Onodera Shoko¹, Akiko Saito^{1,2}, Natsuko Aida^{1,2}, Toshifumi Azuma^{1,2}

(Department of Biochemistry, Tokyo Dental College¹, Tokyo Dental College Research Branding Project²)

O17-4 Spatiotemporal analysis of osteoblast morphology and Wnt signal-induced osteoblast reactivation during bone nodule formation

Naoki Tsuji¹, Kazuto Hoshi¹, Atsuhiko Hkita²

(Department of Sensory and Motor System Medicine, Graduate School of Medicine, The University of Tokyo¹, Department of Tissue Engineering, The University of Tokyo Hospital²)

O17-5 Matrix vesicles from mouse osteoblasts enhance bone repair after a femoral bone defect.

Yuya Mizukami¹, Naoyuki Kawao¹, Yoshimasa Takafuji¹, Takashi Ohira¹, Kiyotaka Okada¹,
Jun-Ichiro Jo^{2,3}, Yasuhiko Tabata², Hiroshi Kaji¹

(Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine¹, Laboratory of Biomaterials, Department of Regeneration Science and Engineering, Institute for Life and Medical Sciences, Kyoto University², Department of Biomaterials, Osaka Dental University³)

O17-6 Regulation of Lamina-LINC protein expression by Runx2 controls the mechanical stress response of osteoblasts through intracellular tension generated by actin filaments. Elucidation of the involvement of Runx2 on the pathogenesis of laminopathy

Toshifumi Azuma¹, Akiko Saito^{1,2}, Kazuaki Nagayama³, Shoko Onodera^{1,2}, Natsuko Aida^{1,2},
Hiroyuki Okada⁴, Hironori Hojo⁴, Shigeaki Kato^{5,6}

(Department of Biochemistry, Tokyo Dental College¹, Oral Health Science Center, Tokyo Dental College², Micro-Nano Biomechanics Laboratory, Department of Mechanical Systems Engineering, Ibaraki University³, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo⁴, Graduate School of Life Science and Technology, Iryo Sosei University⁵, Research Institute of Innovative Medicine, Tokiwa Foundation⁶)

Oral Presentation 18 14:20-15:10

Bone formation 1

Chairs: Midori Nakamura (Department of Biochemistry, Matsumoto Dental University)
Koichi Matsuo (Laboratory of Cell and Tissue Biology, Keio University School of Medicine)

O18-1 The pathogenesis of cleidocranial dysplasia and laminopathy bone lesions is similar

Akiko Saito^{1,2}, Kazuaki Nagayama³, Shoko Onodera^{1,2}, Natsuko Aida^{1,2}, Hiroyuki Okada⁴, Hironori Hojo⁴, Shigeaki Kato^{5,6}, Toshifumi Azuma^{1,2}

(Department of Biochemistry, Tokyo Dental College¹, Research branding project, Tokyo Dental College², Department of Mechanical Systems Engineering, Ibaraki University³, Department of Bioengineering, Graduate School of Engineering, The University of Tokyo⁴, Graduate School of Science and Engineering, Iryo Sosei University⁵, Research Institute of Innovative Medicine, Tokiwa Foundation⁶)

O18-2 Complex defects in osteoblast-lineage cells of X-linked hypophosphatemia: Analysis of a *PHEX* knockout human iPS cell model

Tatsuro Nakanishi^{1,2}, Miwa Yamazaki¹, Kanako Tachikawa¹, Masanobu Kawai¹, Keiichi Ozono², Toshimi Michigami¹

(Department of Bone and Mineral Research, Osaka Women's and Children's Hospital¹, Department of Pediatrics, Graduate School of Medicine, Osaka University²)

O18-3 Glycation stress inhibits fracture healing by reducing osteoblast mineralization.

Tetsuya Seto^{1,2}, Takeshi Honda², Atsushi Mihara¹, Kiminori Yukata¹, Masataka Asagiri²

(Department of Orthopaedic Surgery, Yamaguchi University Graduate School of Medicine¹, Department of Pharmacology, Yamaguchi University Graduate School of Medicine²)

O18-4 Osteocyte inflammation directly causes osteolysis via MYD88 signaling in bacterial bone infection

Tetsuya Yoshimoto¹, Yasuyoshi Ueki², Mikihiro Kajiya¹

(Hiroshima University Hospital, Department of Innovation and Precision Dentistry¹, Indiana University, School of Dentistry²)

O18-5 Not extracellular AGEs but intracellular induce osteoblast apoptosis via endoplasmic stress

Ryusuke Suzuki¹, Yukio Fujiwara², Shoutaro Arakawa¹, Mikihiro Yamanaka³, Ryoji Nagai³, Mitsuru Saito¹

(Department of Orthopaedic Surgery, Jikei University School of Medicine¹, Department of Cell Pathology, Graduate School of Medical Sciences, Kumamoto University, Kumamoto, Japan², Laboratory of Food and Regulation Biology, School of Agriculture, Tokai University³)

Oral Presentation 19 15:10-16:00

Bone formation 2

Chairs: Yuko Nakamichi (Institute for Oral Science, Matsumoto Dental University)
Hiroshi Kaji (Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine)

O19-1 An innovative drug delivery system for bone regeneration using acidic-peptide conjugated low molecular weight heparin

Naoya Iwata, Satoshi Nozawa, Haruhiko Akiyama

(Department of Orthopedic Surgery, Gifu University¹, The Institute for Quantitative Biosciences (IQB), Tokyo University²)

O19-2 Nupr1 deficiency down-regulates expression of the serine protease HtrA1 and suppresses age-related bone loss in male mice

Masatoshi Murayama¹, Hirohito Hirata¹, Masaya Ueno¹, Masaaki Mawatari¹, Akiko Kukita²
(Department of Orthopaedic Surgery, Faculty of Medicine, University of Saga¹, Department of Arthroplasty, Faculty of Medicine, University of Saga²)

O19-3 Development of the biomimetic osteogenic surface based on the characteristic of calcified cartilage.

Katsuhiro Kawaii, Yukiko Kuroda, Koichi Matsuo
(Laboratory of Cell and Tissue Biology, Keio University School of Medicine)

O19-4 Morphological abnormalities in sockeye salmon vertebrae caused by differences in mechanical environment

Chihiro Kawamoto¹, Gosuke Nakai², Hideyo Horiuchi¹, Fumiya Nakamura¹,
Shota Hironaka¹, Hideyuki Mitomo³, Kuniharu Ijiro³, Naoki Sasaki², Hiromi Kimura-Suda²
(Graduate School of Science and Engineering, Chitose Institute of Science and Technology¹,
Faculty of Science and Engineering, Chitose Institute of Science and Technology², Research
Institute for Electronic Science Hokkaido University³)

O19-5 The development of a human bone marrow adipose tissue-like cellular construct using clumps of MSCs/ECM complexes

Mai Yoshino¹, Mikihito Kajiya², Tetsuya Yoshimoto², Shin Morimoto¹, Tomoyuki Iwata¹,
Noriyoshi Mizuno¹
(Department of Periodontal Medicine, Graduate School of Biomedical and Health Sciences,
Hiroshima University¹, Department of Innovation and Precision Dentistry, Hiroshima University
Hospital²)

P-1 RNA-binding protein Cpeb4 promotes osteoclast differentiation by promoting indirectly transcription of Nfatc1.

Yasuhiro Arasaki, Tadayoshi Hayata

(Department of Molecular Pharmacology, Graduate School of Pharmaceutical Sciences, Tokyo University of Science)

P-2 CysLTR1 is dispensable for osteoclast differentiation and bone resorption

Hirofumi Fujita¹, Takako Hattori², Satoshi Kubota²

(Department of Cytology and Histology, Okayama University¹, Department of Biochemistry and Molecular Dentistry, Okayama University²)

P-3 Induction of osteoclast differentiation using Hajdu-Cheney syndrome disease-specific iPS cells with NOTCH2 gene mutation

Natsuko Aida^{1,3}, Tatsukuni Ohno^{2,3}, Akiko Saito^{1,3}, Hiroshi Kato⁴, Shoko Onodera^{1,3}, Toshifumi Azuma^{1,2,3}

(Department of Biochemistry, Tokyo Dental College¹, Oral Health Science Center, Tokyo Dental College², Tokyo Dental College Research Branding Project³, Department of Oral and Maxillofacial Surgery⁴)

P-4 Mechanisms of osteoclast differentiation and bone metabolism by RANKL and IGFBP signaling crosstalk.

Yusaku Hamada¹, Takashi Izawa², Yuri Yoshikawa³, Gohji Kozaki¹, Hiroshi Kamioka²

(Department of Orthodontics, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama Univ.¹, Department of Orthodontics, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama Univ.², Department of Orthodontics, Okayama University hospital³)

P-5 The flavonoid Chrysin inhibits osteoclastogenesis by suppressing phosphorylation of CREB.

Akihiro Nakata¹, Akihiro Nakata¹, Kosuke Nishi^{2,3}, Hisashi Nishiwaki², Takuya Sugahara^{2,3}, Yuuki Imai^{1,4}

(Department of Pathophysiology, Graduate School of Medicine, Ehime University¹, Department of Bioscience, Graduate School of Agriculture, Ehime University², Food and Health Sciences Research Center, Ehime University³, Proteo-Science Center, Ehime University⁴)

P-6 Septoclasts at the chondro-osseous boundary promote osteoclastogenesis contributing to bone marrow cavity development

Eriko Sumiya¹, Shinichiro Sawa²

(Department of Orthopedic Surgery, Faculty of Medicine, University of Tokyo¹, Division of Mucosal Immunology, Medical Institute of Bioregulation, Kyushu University²)

P-7 Transferrin receptor 1-mediated iron uptake regulates bone mass in mice via osteoclast mitochondria and cytoskeleton

Toshifumi Fujiwara^{1,2}, Lei Wang^{2,3}, Yasuharu Nakashima¹, Haibo Zhao^{2,3}

(The department of Orthopaedic Surgery, Kyushu University¹, Center for Osteoporosis and Metabolic Bone Diseases, University of Arkansas for Medical Sciences², Southern California Institute for Research and Education³)

P-8 Effects of Urothelial cancer-associated 1 (UCA1) long noncoding RNA on osteoclast differentiation and function

Namba Yuki¹, Takashi Izawa², Hiroshi Kamioka², Satoshi Kubota³

(Department of Orthodontics, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama Univ.¹, Department of Orthodontics, Okayama University², Medicine, Dentistry and Pharmaceutical Sciences, Okayama University³)

P-9 Identification and functional analysis of novel myeloid progenitor cells differentiate into osteoclast

Erika Yamashita^{1,2}, Masaru Ishii^{1,3}

(Department of Immunology and Cell Biology, Graduate School of Medicine, Osaka University¹, Division of Health Sciences, Graduate School of Medicine, Osaka University², Department of Immunology and Cell Biology, Graduate School of Frontier Bioscience, Osaka University³)

P-10 Pharmacological effects of planar catechin on bone metabolism

Daiki Sugawara^{1,2,4}, Yuki Azetsu^{2,4}, Akiko Karakawa^{2,4}, Masahiro Chatani^{2,4}, Nobuhiro Sakai^{3,4}, Masamichi Takami^{2,4}

(Division of Medical & Dental Cooperative Dentistry, Department of Systemic Dentistry, Showa University School of Dentistry¹, Department of Pharmacology, Showa University School of Dentistry², Department of Dental Education, Showa University School of Dentistry³, Pharmacological Research Center, Showa University⁴)

P-11 Study on the Effect of Acupuncture Current Stimulation on Bone Loss Associated with Ovariectomy in Rats

Siqin Xu¹, Wataru Minamizono^{1,4}, Nao Yashima^{2,4}, Hirai Suito^{1,4,5}, Masafumi Ohsako^{3,4}

(The Graduate School of Human Life Design, University of Toyo¹, The Graduate School of Health and Sports Sciences, University of Toyo², The Faculty of Health and Sports Sciences, University of Toyo³, The Life Innovation Institute, University of Toyo⁴, Japan Society For The Promotion Of Science DC2⁵)

P-12 Effects of Noncontact Electrical Stimulation of Different Currents on Hindlimb suspension Rat

Wataru Minamizono¹, Nao Yashima², Siqin Xu¹, Hirai Suito^{1,3,5}, Masafumi Ohsako^{3,4}

(Graduate School of Life Design, University of Toyo¹, Toyo University Graduate School of Health and Sport Sciences², Toyo University, School of Health and Sport Sciences³, Toyo University Life Innovation Institute⁴, JSPS DC2⁵)

P-13 Kielin/chordin-like protein enhances effect of bone morphogenic protein-2 to induce osteoblast differentiation

Kei Nagasaki^{1,2}, Atsushi Yamada¹, Kiyohito Sasa¹, Ryutarō Kamijō¹

(Department of Biochemistry, School of Dentistry, Showa University¹, Department of Orthopedic Surgery, School of Medicine, Showa University², Department of Pharmacology, School of Medicine, Showa University³)

P-14 Osteoblast chirality-driven fine structure of calvaria and fibula

Koichi Matsuo¹, Shinju Usami¹, Ikumu Taguchi¹, Satoshi Miyamoto¹, Yukiko Kuroda¹, Shinobu Noji¹, Atsushi Momose³, Koki Yoshida², Hiroaki Onoe², Katsuhiro Kawaai¹

(Keio University School of Medicine¹, Faculty of Science and Technology, Keio University², IMRAM, Tohoku University³)

- P-15 Osteoblasts on titanium disc promote osteogenesis with autophagy through AMPK activity.**
Kei Egashira^{1,2}, Hiroshi Kajiya^{1,3}, Yuri Kono¹, Kae Kakura², Hirofumi Kido²
(Oral Medicine Research Center, Fukuoka Dental College¹, Section of Oral Implantology, Department of Oral Rehabilitation, Fukuoka Dental College², Section of Cellular Physiology, Department of Physiological Science and Molecular Biology, Fukuoka Dental College³)
- P-16 Mir125b1-derived miR-125b-5p negatively regulates osteoblast differentiation**
Shintaro Ogashira, Yuji Yoshiko, Shohei Kohno, Tomonori Hoshino
(Department of Orthodontics, Graduate School of Biomedical and Health Sciences, Hiroshima University¹, Department of Calcified Tissue Biology, Graduate School of Biomedical and Health Sciences, Hiroshima University²)
- P-17 Characterization of the OPG-producing osteoblasts**
Masayuki Tsukasaki¹, Kazutaka Nakamura^{2,3}, Hiroshi Takayanagi³
(Department of Osteoimmunology Graduate School of Medicine and Faculty of Medicine, The University of Tokyo¹, Department of Sensory and Motor System Medicine, Graduate School of Medicine, The University of Tokyo², Department of Immunology Graduate School of Medicine and Faculty of Medicine, The University of Tokyo³)
- P-18 The mechanism of the regulation of osteoblast adhesion and migration by CD302**
Eriko Aoyama¹, Satoshi Kubota², Masaharu Takigawa¹
(ARCOCS, Okayama University, Dental School/ Faculty of Medicine, Dentistry and Pharmaceutical Sciences¹, Department of Biochemistry and Molecular Dentistry, Okayama University, Faculty of Medicine, Dentistry and Pharmaceutical Sciences²)
- P-19 Withdrawn**
- P-20 Effects of Noncontact Current Stimulation on Bone Healing in a Rat Leg Fracture Model**
Nao Yashima^{1,3}, Wataru Minamizono^{2,3}, Siqin Xu², Hirai Suito^{2,3,4}, Masafumi Ohsako^{3,5}
(Graduate School of Health and Sport Sciences, University of Toyo¹, Graduate School of Life Design, Toyo University², Life Innovation Institute, Toyo University³, Japan Society for the Promotion of Science⁴, Department of Health and Sports Sciences, Toyo University⁵)
- P-21 Insulin sensitivity is elevated in mice lacking PTEN expression in osteocytes**
Saori Kinoshita¹, Toshimi Michigami¹, Keiichi Ozono², Masanobu Kawai¹
(Department of Bone and Mineral Research Research Institute, Osaka Women's and Children's Hospital)
- P-22 Regulation of osteoblast to osteocyte differentiation by Cyclin-dependent kinase-1**
Tomoyuki Tanaka¹, Shingo Sato², Hiroyuki Inose¹
(Dept. of Orthop. Surg., Graduate School, Tokyo Medical and Dental Univ.¹, Center for Innovative Cancer Treatment, Tokyo Medical and Dental Univ. Hospital²)

P-23 S-adenosylmethionine can promote polyamine synthesis and genes expression thereby regulating chondrocytic differentiation.

HOANGDINH LOC¹, Eriko Aoyama¹, Miki Hiasa³, Hiroshi Omote³, Satoshi Kubota⁴, Takuo Kuboki², MASAHARU TAKIGAWA¹

(ARCOCS, dental school, Okayama university¹, Department of Oral Rehabilitation and Regenerative Medicine, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University², Laboratory of Membrane Biochemistry, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences.³, Department of Biochemistry and Molecular Dentistry, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences.⁴)

P-24 To elucidate the effect of sclerostin deficiency on the development of osteonecrosis of the jaw

Fuminori Nakashima¹, Shinji Matsuda¹, Chisa Shukunami², Noriyoshi Mizuno¹

(Department of Periodontal Medicine, Graduate School of Biomedical and Health Science, Hiroshima University¹, Molecular Biology and Biochemistry, Graduate School of Biomedical and Health Science, Hiroshima University²)

P-25 Development of a rat model of lipopolysaccharide-induced peri-implantitis-like lesions and determination of histopathology and immunopathology

Shinichiro Kuroshima¹, Tomohiro Ishizaki², Rhyohei Kozutsumi¹, Haruka Kaneko², Yusuke Uto¹, Yusuke Uchida¹, Takashi Sawase¹

(Department of Applied Prosthodontics, Institute of Biomedical Sciences, Nagasaki University¹, Department of Applied Prosthodontics, Graduate School of Biomedical Sciences, Nagasaki University²)

P-26 Cell migration and morphometric change in alveolar bone tissues after bmp gene transfer to periodontal tissues

Mariko Yamamoto^{1,2}, Ryosuke Ozasa⁴, Takuya Ishimoto^{3,4}, Takayoshi Nakano³, Marina Kashiwagi², Marina Kashiwagi², Shigeki Yamanaka²

(Kansai Women's College¹, Kyoto University², Osaka University³, Toyama University⁴)

P-27 Compared with the risk of developing osteonecrosis with different bisphosphonate formulations in anti-resorptive agent-related osteonecrosis of the jaw model mice.

Ryuta Kubo¹, Rui Tajiri¹, Hideki Nakayama¹, Takeshi Miyamoto²

(Department of Oral & Maxillofacial Surgery, Sensory and Motor Organ Sciences, Faculty of Life Sciences, Kumamoto University¹, Department of Orthopedics, Sensory and Motor Organ Sciences, Faculty of Life Sciences, Kumamoto University²)

P-28 Understanding the role of Mxk in periodontal disease through utilisation of Mxk knockout rats

Lisa Yagasaki^{1,2}, Tomoki Chiba¹, Ryota Kurimoto¹, Hiroshi Asahara¹

(Department of Systems BioMedicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University¹, Department of Periodontology, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University²)

P-29 Local delivery of bone anabolic agents protects the thin alveolar bone in the murine mechanical orthodontic force model.

Jia Qi^{1,2}, Yoshiro Matsumoto¹, Cangyou Xie^{2,3}, Fatma Rashed², Takashi Ono¹, Kazuhiro Aoki²

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P-30 Characteristics of skeletal muscle atrophy in a rat model of adenine-induced chronic kidney disease

Kento Okamoto, Yuji Kasukawa, Hiroyuki Nagasawa, Koji Nozaka, Hiroyuki Tsuchie, Shun Igarashi, Fumihito Kasama, Naohisa Miyakoshi

(Department of Orthopedic Surgery, Akita University Graduate School of Medicine)

P-31 Tumor necrosis factor-alpha blunts the osteogenic effects of exosomes by affecting muscle cells

Yuto Takada¹, Yuya Mizukami¹, Yoshimasa Takafuji¹, Masahfumi Muratani², Takashi Ohira¹, Naoyuki Kawao¹, Kiyotaka Okada¹, Hiroshi Kaji¹

(Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine¹, Department of Genome Biology Faculty of Medicine University of Tsukuba²)

P-32 Effects of soft tissue injury on the bone metabolism and muscle metabolism by mouse model of the soft tissue injury

Kenta Kiyomoto^{1,2}, Kousuke Iba¹, Megumi Hanaka³, Hikaru Hayakawa³, Kenichi Takashima³, Toshihiko Yamashita³

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P-33 Generation and characterization of novel conditional Mxk knockout mice

Lin Liu, Tomoki Chiba, Hiroshi Asahara

(The Department of Systems BioMedicine, Tokyo Medical and Dental University)

P-34 Association between Skeletal Muscle Mass and Thyroid Hormones in Euthyroid Korean Postmenopausal Women

Seo Yuri

(Department of Family Medicine, Chungnam National University Sejong Hospital, Sejong, Republic of Korea.)

P-35 Low testosterone in male long distance runners decreases bone mineral density of lumbar spine

Suguru Torii¹, Akiko Hatsukari²

(Faculty of Sport Sciences, Waseda University¹, Graduate School of Sport Sciences, Waseda University²)

P-36 Sclerostin deficiency effectively promotes BMP-2-induced ectopic bone formation

Masanori Koide¹, Yasuhiro Kobayashi¹, Teruhito Yamashita¹, Hisataka Yasuda², Nobuyuki Udagawa^{1,3}

(Institute for Oral Science, Matsumoto Dental University¹, Bioindustry Division, Oriental Yeast Co., Ltd.², Department of Biochemistry, Matsumoto Dental University³)

- P-37 Abnormal Regulation of TGF-beta Pathway (Smads-cascade and Nfatc1) might have induced Risk of High and Low turn-over Osteoporosis survival situation on course of Osteoclast and Osteoblast differentiation in between ALDH2-SNPs (rs. 671)**
Hitomi Nakamura, Toshiaki Watanabe, Takeo Ichigaya
(The Department of Neuropathology, Graduate school of Medical Science, Teikyo University of Sciences¹, The Department of Neuropathology, Graduate school of Medical Science, Teikyo University of Sciences²)
- P-38 The functional change of bone marrow mesenchymal stem cells by Relative Energy Deficiency in Sport (RED-S)**
Aoi Ikedo, Yuuki Imai
(Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University)
- P-39 ShizuiNet: A blockchain based-traceability solution for dental pulp and iPS cells used for regenerative medicine**
Ken-ichi Tezuka¹, Izumi Kuroda¹, Tomoko Kawaguchi², Yuta Shimizu³
(Department of Stem Cell and Regenerative Medicine, Gifu University Graduate School of Medicine¹, Department of Oral Maxillofacial Surgery, Gifu University Graduate School of Medicine², Department of Periodontology, Asahi University School of Dentistry³)
- P-40 Conditioned Medium from the Stem Cells of Human Exfoliated Deciduous Teeth Ameliorates Experimental Temporomandibular Joint Osteoarthritis by Inducing M2-Polarized Macrophages**
Linze Xia¹, Fumiya Kano¹, Noboru Hashimoto¹, Eiji Tanaka², Akihito Yamamoto¹
(Department of Tissue Regeneration, Institute of Biomedical Sciences, Tokushima University Graduate School¹, Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School²)
- P-41 Effect of aging on the relationship between BMI and vBMD/bone microstructure evaluated by HR-pQCT in postmenopausal women**
Norifumi Fujii¹, Manabu Tsukamoto², Kei Asano³, Yoshiaki Ikejiri³, Toru Yoshioka³, Mikiya Sawa³, Kenji Obayashi³, Takurou Ban³, Hideaki Murata³, Daiki Yamagiwa¹, Nobukazu Okimoto⁴
(Department of Rehabilitation, Shimla Hospital¹, Department of Orthopedic Surgery, School of Medicine, University of Occupational and Environmental Health², Department of Orthopedic Surgery, Shimura Hospital³, Okimoto Clinic⁴)
- P-42 Difference of fat compositions in lumbar vertebral bone marrow according to age and relation to bone mineral density**
Yuji Kasukawa¹, Michio Hongo², Hiroyuki Tsuchie², Daisuke Kudo¹, Hayato Kinoshita², Ryota Kimura², Naohisa Miyakoshi²
(Department of Rehabilitation Medicine, Akita University Hospital¹, Department of Orthopedic Surgery, Akita University Graduate School of Medicine²)
- P-43 In the treatment of osteoporosis, the cortical shell of the vertebrae is enlarged, with predominance of bone formation in the periosteum and resorption in the endosteum. Also, bone formation is accompanied by mineral uptake and resorption is accompanied by mineral release from the bone.**
Nobuhito Nango¹, Shogo Kubota¹, Kazutaka Nomura¹, Yusuke Horiguchi¹, Moeko Shimizu¹, Ko Chiba², Masafumi Machida³
(Ratoc System Engineering Co., Ltd.¹, Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences², Healthcare Foundation Hakujiikai Memorial Hospital³)

P-44 The investigation of factors influencing bone loss in male athletes

Akiko Hatsukari¹, Suguru Torii²

(Graduate School of Sport Sciences, Waseda University¹, Faculty of Sport Sciences, Waseda University²)

P-45 360-degree assessment of bone health in Graves' disease: a case-control study

Prasoon Rastogi¹, Madhukar Mittal¹, Mithu Banerjee², Ravindra Shukla¹, Rajesh Kumar³, Mahendra Kumar Garg¹

(Department of Endocrinology and Metabolism, All India Institute of Medical Sciences Jodhpur¹, Department of Biochemistry, All India Institute of Medical Sciences Jodhpur², Department of Nuclear Medicine, All India Institute of Medical Sciences Jodhpur³)

P-46 Molecular mechanisms for generation of non-permissive niche for myeloma cells by activated osteoblasts

SooHa Kim^{1,2}, Jumpei Teramachi³, Masahiro Hiasa^{1,2}, Hirofumi Tenshin^{1,2}, Emiko Nakaue^{1,2}, Mariko Tanaka^{1,2}, Motosumi Nakagawa^{1,2}, Itsuro Endo⁴, Takeshi Harada², Eiji Tanaka¹, Masahiro Abe²

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P-47 Functional analysis of Uhrf1 during osteophyte formation

Akihiro Jono¹, Yuta Yanagihara², Tomofumi Kinoshita¹, Masaki Takao¹, Yuuki Imai²

(Department of Bone and Joint Surgery, Graduate School of Medicine Ehime Univ¹, Division of Integrative Pathophysiology Proteo-Science Center, Graduate School of Medicine Ehime University²)

P-48 BMP signaling is activated in a novel animal model of shoulder cuff tear arthropathy

Tomohiro Iuchi¹, Toshirou Ijuin^{1,2}, Hiroki Tawaratsumida¹, Yusuke Masuda^{1,3}, Shingo Maesako^{1,4}, Shingo Maeda⁴, Noboru Taniguchi^{1,2,3,4}

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P-49 Effects of bone metabolism markers in rheumatoid arthritis patients treated with romosozumab

Hiroki Wakabayashi¹, Yosuke Nishioka², Akihiro Sudo¹

(Department Orthopedic Surgery, Mie University)

P-50 The evaluation of erosions in patients with rheumatoid arthritis: comparison of plain X-ray with HR-pQCT

Kazuteru Shiraishi¹, Ko Chiba¹, Kounosuke Watanabe¹, Naoki Iwamoto², Atsushi Kawakami², Makoto Osaki¹

(The Department of Orthopaedics Surgery, Nagasaki Graduate School of Biomedical sciences¹, The Department of Immunology and Rheumatology, Nagasaki Graduate School of Biomedical sciences²)

- P-51 Bone mineral density and microstructure in male patients with DISH**
Ko Chiba, Kazutaka Mitsumizo, Narihiro Okazaki, Makoto Osaki
(Department of Orthopedic Surgery, Nagasaki University Graduate School of Biomedical Sciences)
- P-52 Changes in osteochondral unit during osteoarthritis focusing on the non-osteocyte layer of the subchondral bone plate**
Keita Nagira¹, Hiroshi Hagino²
(Department of Orthopedic Surgery, Faculty of Medicine, Tottori University¹, Department of Orthopedic Surgery, Sanin Rosai Hospital²)
- P-53 Safety and Efficacy of Brosumab in Clinical Practice Based on Specific Use Results Survey (Interim Report)**
Nobuaki Ito¹, Hiroyuki Tanaka², Takuo Kubota³, Yasuo Imanishi⁴, Hiroko Kashiwagi⁵, Hiroshi Kuwazawa⁶, Tania Shigenobu⁶, Maika Horibe⁶, Seiji Fukumoto⁷
(Division of Nephrology and Endocrinology / Osteoporosis Center, The University of Tokyo Hospital¹, Department of Pediatrics, Okayama Saiseikai General Hospital², Department of Pediatrics, Osaka University Hospital³, Department of metabolism, Endocrinology and Molecular Medicine, Osaka Metropolitan University Hospital⁴, Department of Pediatrics, Japan Community Health care Organization Osaka Hospital⁵, Pharmacovigilance Division, Kyowa Kirin Co.,Ltd.⁶, Institute of Advanced Medical Sciences Tokushima University⁷)
- P-54 A case of severe hypophosphatemia in FGF23-related hypophosphatemic ricket with hyperparathyroidism**
Ueda Sahoko, Risa Morikawa, Yasumasa Yoshino, Takeshi Takayanagi, Atsushi Suzuki
(Department of Endocrinology, Diabetes and Metabolism, Fujita Health University, School of Medicine)
- P-55 Evaluation of PTH-Ca axis in subjects with possible normocalcemic primary hyperparathyroidism**
Reiko Inoue, Kota Ishizawa, Fukuo Kosokabe, Yoshiyuki Ban, Daisuke Inoue
(Third Department of Medicine, Teikyo University Chiba Medical Center)
- P-56 Clinical features of FGF23-related hypophosphatemic rickets/osteomalacia in Japan**
Makoto Fujiwara¹, Takeshi Ishimi¹, Chieko Yamada¹, Shinji Takeyari¹, Kenichi Yamamoto¹, Yukako Nakono¹, Hirofumi Nakayama^{1,2}, Yasuhisa Ohata¹, Taichi Kitaoka¹, Takuo Kubota¹, Keiichi Ozono¹
(Department of Pediatrics, Osaka University Graduate School of Medicine¹, First Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry²)
- P-57 Medical management of primary hyperparathyroidism in one institution; focus on evocalcet**
Katsunori Manaka, Junichiro Sato, Hirofumi Horikochi, Masaomi Nangaku, Noriko Makita
(Division of Nephrology and Endocrinology, The University of Tokyo Graduate School of Medicine)

- P-58 Background of XLH patients with burosumab treatment and its short-term effectiveness and safety of interim analysis of the SUNFLOWER study**
 Toshimi Michigami¹, Noriyuki Namba², Nobuaki Ito³, Takuo Kubota⁴, Masanori Kanematsu⁵, Seiji Fukumoto⁶, Keiichi Ozono⁷
 (Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital¹, Department of Pediatrics and Perinatology, Faculty of Medicine, Tottori University², Division of Nephrology and Endocrinology, The University of Tokyo Hospital³, Department of Pediatrics, Graduate School of Medicine, Osaka University⁴, Medical Affairs Department, Kyowa Kirin Co Ltd⁵, Tamaki Aozora Hospital⁶, Osaka University⁷)
- P-59 Lower body bone fracture and bone fracture in males exacerbated the life prognosis of patients with maintenance hemodialysis at the dialysis center of the Takagi hospital, a regional general hospital**
 Kazuhiko Yoshikawa¹, Takuya Kishi², Kazuma Fujimoto²
 (Division of Orthopedic Surgery, the Kouhou-kai Takagi Hospital¹, International University of Health and Welfare Graduate School of Medicine²)
- P-60 The Effect of Psychogenic Stress on Bone Metabolism during Growth Stages**
 Sangun Lee
 (The School of Health Sciences, Aomori University of Health and Welfare)
- P-61 Cleidocranial Dysostosis: Case reports and Literature Review**
 Masanobu Fujimoto, Shintaro Senoo, Yukiko Yamaguchi, Noriyuki Namba
 (Division of Pediatrics and Perinatology, Faculty of Medicine, Tottori University)
- P-62 The Experimental Evidence of Direct Link between Cholesterol Medication and Progression of Osteoarthritis**
 Young-Gwon Kim, Gyuseok Lee, Thanh-Tam Tran, Jun Ko, Je-Hwang Ryu
 (Department of Pharmacology and Dental Therapeutics, School of Dentistry, Chonnam National University, Gwangju, Republic of Korea)
- P-63 HIF-1 α is a negative regulator of bone remodeling in mice.**
 Su-Jin Kim¹, Sun Young Lee¹, Yun Hyun Huh², Je-Hwang Ryu¹
 (Department of Pharmacology and Dental Therapeutics, School of Dentistry, Chonnam National University, Gwangju, Republic of Korea¹, School of Life Sciences, Gwangju Institute of Science and Technology (GIST), Gwangju, Republic of Korea²)
- P-64 Type XII collagen deficiency forms ectopic bone via membranous ossification in the ligament.**
 Taiju Yoneda, Kei Fujihara, Sho Mitunaga, Shuhei Kajikawa, Yayoi Izu
 (Laboratory Animal Science, Faculty of Veterinary Medicine, Okayama University of Science)

SRP-1 A Case of Severe Bone Loss Associated with Hypothyroidism and Vitamin D Deficiency and Marked Recovery in Bone Mineral Density with Thyroid Hormone and Vitamin D Replacements

Motoharu Sakai, Tomohiko Yoshida, Masaya Yamaga, Shunichiro Onishi, Minoru Takemoto
(Department of Diabetes, Metabolism, and Endocrinology, International University of Health and Welfare, Narita Hospital)

SRP-2 Down Regulation of TGF-beta Receptor (TGFbR) mRNA Expression might have induced osteoclastic survival in Cys-type (rs. 2066702) and/or His-type (rs. 1229987) of Human ADH1b-Single Nucleotide Polymorphism (SNP).

Asumi Kataoka, Toshiaki Watanabe, Ayumi Nakamura, Takeo Ichigaya, Hideaki Sano, Kanako Sugiura, Keiyu Tomita, Akiko Funaki, Makoto Yoshida, Masasi Kamatuka, Masayuki Ichige

(The Department of Neuropathology, Graduate school of Medical Science, Teikyo University of Sciences¹, The Department of Neuropathology, Faculty of Medical Science, Teikyo University of Sciences²)

SRP-3 Analysis of the function of Utx in bone metabolism

Wataru Kitamura¹, Yanagihara Yuta², Imai Yuuki^{1,2}

(Department of Pathophysiology, Medical School, Ehime University¹, Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University²)

SRP-4 Muscle pathology in mEDS is caused by disruption of lipid metabolism regulated by collagen XII

Haruto Kushige^{1,2}, Fumiyo Saito³, Hiroshi Sakai⁷, Risuke Mizuno⁴, Ryusuke Momota⁵, Koch Manuel⁶, Yuuki Imai⁷, Yayoi Izu²

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SRP-5 Elucidation of the roles of bone specific collagen XII during development of muscle pathology of muscle and connective tissue overlapping disease

Yuriko Nagato¹, Hiroaki Hemmi², Syuhei Kajikawa¹, Yuki Imai³, Yayoi Izu¹

(Division of veterinary laboratory animal science, Okayama University of Science¹, Division of veterinary immunology, Okayama University of Science², Proteo-science center, Ehime University³)

SRP-6 The pathological mechanism of rheumatoid temporomandibular arthritis using a rheumatoid arthritis mouse model

Mei Iida¹, Kazuhiro Shibusaka², Miki Maemura³, Soichiro Negishi³, Ryota Nakano⁴, Masahiro Hosonuma⁵, Fumiko Yano⁶

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SRP-7 Type XII collagen expressed by osteoblasts may function as a mechanosensor in bone.

Sho Mitsunaga¹, Ryota Miyasita¹, Aoi Ikedo², Yuuki Imai², Yayoi Izu¹, Syuhei Kajikawa¹
(Department of Veterinary Medicine, Okayama University of science¹, Proteo-Science Center, Ehime University²)

SRP-8 Prevalence of radiograph lumbar spondylolisthesis and its association with low back pain, walking speed and muscle index in the general population : the 2nd survey of the ROAD study

Satoshi Arita¹, Yuyu Ishimoto¹, Hiroshi Hashizume¹, Toshiko Iidaka², Sakae Tanaka³,
Munehito Yoshida⁴, Hiroshi Yamada¹, Noriko Yoshimura²
(Department of Orthopaedic Surgery, Wakayama Medical University¹, Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical and Research Centre, Faculty of Medicine, The University of Tokyo², Department of Orthopedics, The University of Tokyo Hospital³, Department of Orthopaedic Surgery, Sumiya Orthopaedic Hospital⁴)

SRP-9 Roles of exosomal HB-EGF on prostate cancer-induced bone resorption

Keisuke Ikeda¹, Shosei Yoshinouchi², Chiho Matsumoto¹, Michiko Hirata¹, Masaki Inada^{1,2}
(Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology¹, Cooperative Major in Advanced Health Science, Tokyo University of Agriculture and Technology²)

SRP-10 Comprehensive gene expression analysis on a mouse model of disuse muscle atrophy

Urara Kasuga¹, Tsukasa Tominari^{1,2}, Chiho Matsumoto¹, Michiko Hirata¹, Yoshitsugu Aoki²,
Masaki Inada¹
(Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology¹, Department of Molecular Therapy, National Institute of Neuroscience, National Centre of Neurology and Psychiatry²)