

Day1 Thursday, July 27

JSBMR Committee Highlights 8:00-9:00

Room 1 / TSUKUSHI 1 (3F)

Chairs: Sakae Tanaka (Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)
Yasuhiro Takeuchi (Toranomon Hospital Endocrine Center)

IPH1 Basic

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

IPH2 Clinical

Yasuhiro Takeuchi
(Toranomon Hospital Endocrine Center, Tokyo, Japan)

Joint Symposium 1: JSBMR & Japanese Society of Osteoimmunology 9:10-10:40

Room 1 / TSUKUSHI 1 (3F)

New development of osteoimmunology

Chairs: Hiroshi Takayanagi (Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo)
Takashi Nagasawa (Laboratory of Stem Cell Biology and Developmental Immunology, Graduate School of Frontier Biosciences and Graduate School of Medicine, Osaka University)

JO1 RANKL Biology -Beyond Osteoimmunology-

Tomoki Nakashima^{1,2}
(Department of Cell Signaling, Tokyo Medical and Dental University, Tokyo, Japan¹, AMED-CREST, Tokyo, Japan²)

JO2 Osteoclastogenesis and inflammation

Takeshi Miyamoto, Morio Matsumoto, Masaya Nakamura
(Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan)

JO3 The adipo-osteogenic progenitors create microenvironmental niches for hematopoietic stem cells in the bone marrow

Takashi Nagasawa
(Laboratory of Stem Cell Biology and Developmental Immunology, Graduate School of Frontier Biosciences and Graduate School of Medicine, Osaka University)

JO4 Single Cell Analysis Reveals Disease-Associated Fibroblast Subsets in Rheumatoid Arthritis

Fumitaka Mizoguchi^{1,2}
(Department of Rheumatology, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU), Tokyo, Japan¹, Division of Rheumatology, Immunology, and Allergy, Brigham and Women's Hospital, Harvard Medical School, Boston, USA²)

New insight and perspective of bone metabolism based on endocrine and metabolic diseases

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

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

- IP1-1 The diagnosis and treatment of FGF23-related hypophosphatemic diseases**
Yuka Kinoshita
(Division of Nephrology & Endocrinology, Department of Medicine, the University of Tokyo Hospital, Tokyo, Japan)
- IP1-2 Sharing Developmental Mechanisms of Sex and Bone**
Kenichi Kashimada
(Department of Pediatrics and Developmental Biology, Tokyo Medical and Dental University, Tokyo, Japan)
- IP1-3 Roles of osteocytes in glucose metabolism**
Ayumu Takeno, Ippei Kanazawa, Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine, Izumo, Japan)

Nobel perspectives of targeted therapies for preventing joint damage in rheumatic diseases

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

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

- JR1 Novel therapeutic strategy for joint destruction in rheumatoid arthritis**
Sakae Tanaka
(Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo, Tokyo, Japan)
- JR2 Novel therapeutic strategy targeting Fractalkine/CX3CL1 for rheumatoid joint destruction**
Toshio Imai
(KAN Research Institute, Inc.)
- JR3 Targeting JAK**
Shingo Nakayamada, Yoshiya Tanaka
(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan, Kitakyushu, Fukuoka, Japan)
- JR4 Targeting Btk/Syk**
Hiroshi Takayanagi
(Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan)

JSBMR Committee Symposium 2: Industry-academia cooperation 10:40-12:10
Room 2 / TSUKUSHI 2 (3F)

Innovation Road: from basic to clinical

Chair: Takeshi Miyamoto (Department of Orthopaedic Surgery, Keio University School of Medicine)

- IP2-1 Repair and regeneration of articular cartilage using cell sheet technology**
Masato Sato
(Department of Orthopaedic Surgery, Surgical Science, Tokai University School of Medicine)
- IP2-2 Discovery of innovative drugs emerging from academic-industrial collaborations, -Ono's case studies-**
Hiroshi Yamamoto
(Discovery Research Alliance, Ono Pharmaceutical Co., Ltd., Osaka, Japan)
- IP2-3 AMED Support Programs for Regenerative Medicine Research: Making academic seeds practical**
Hiroko Takuma
(Division of Regenerative Medicine Research, Department of Research Promotion, AMED, Tokyo, Japan)

Lunchtime Educational Lecture 1 12:20-13:20 **Room 1 / TSUKUSHI 1 (3F)**

Chair: Toshihisa Komori (Department of Cell Biology, Unit of Basic Medical Sciences, Medical and Dental Sciences, Nagasaki University Graduate School of Biomedical Sciences)

- LEL1 RANKL-targeted therapy: beyond osteoporosis?**
Yoshiya Tanaka
(The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan)

Sponsored by Daiichi Sankyo Co., Ltd.

Lunchtime Educational Lecture 2 12:20-13:20 **Room 2 / TSUKUSHI 2 (3F)**

Chair: Yosuke Okada (The First Department of Internal Medicine, University of Occupational and Environmental Health Japan)

- LEL2 Role of AGEs in osteovascular disorders**
Sho-ichi Yamagishi
(Department of Pathophysiology and Therapeutics of Diabetic Vascular Complications, Kurume University School of Medicine, Kurume, Japan)

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Lunchtime Educational Lecture 3 12:20-13:20 **Room 3 / SHIKA 1 (5F)**

Chair: Naoyuki Takahashi (Matsumoto Dental University Institute for Oral Science)

- LEL3 Osteoporosis therapy in the near future: Harmonized treatment by stimulating bone formation and suppressing bone resorption- Milk constituents "MBP" as a model**
Akira Itabashi
(Saitama Center for Bone Research, Kubojima Clinic)

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Chair: Yuuki Imai (Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University)

LEL4-1 Appropriate selection and combination therapy of bisphosphonates considered by pharmacological action -Targeting best efficacy and safety of osteoporosis treatment-

Kosuke Ebina, Makoto Hirao, Hideki Yoshikawa
(Department of Orthopaedic Surgery, Osaka University, Graduate School of Medicine, Osaka, Japan)

LEL4-2 Minodronate; a promising therapeutic strategy after teriparatide

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

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Chair: Masako Ito (Center for Diversity & Inclusion, Nagasaki University)

W1 Keynote Lecture

Kirameki Project of Kyusyu University Hospital for the past 10 years and present status of women doctors

Akiko Chishaki
(Department of Health Sciences, Faculty of Medical Sciences, Kyushu University)

Tripartite Talk : Work-life balance and diversity for researchers

Akiko Chishaki(Department of Health Sciences, Faculty of Medical Sciences, Kyushu University)

Yoshiki Seino(JCHO Osaka Hospital)

Masako Ito(Center for Diversity & Inclusion, Nagasaki University, Nagasaki, Japan)

Chairs: Yuuki Imai (Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University)

Ikegawa Shiro (Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences)

- JM1 Big data in genomics and its capacity in medical research**
Emma Duncan
(Department of Endocrinology and Diabetes, Royal Brisbane and Women's Hospital / Queensland University of Technology / University of Queensland/ Australian and New Zealand Bone and Mineral Society)
- JM2 Big data analysis in bone and joint diseases**
Shiro Ikegawa
(Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences, Tokyo, Japan)
- JM3 Genome wide Association Study of Idiopathic Osteonecrosis of the Femoral Head**
Shin-Yoon Kim
(Department of Orthopedic Surgery, Kyungpook National University Hospital)
- JM4 Genetics of Idiopathic Osteonecrosis of the Femoral Head: Genome-Wide Association Study**
Yuma Sakamoto^{1,2}
(Department of Orthopaedic Surgery, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan¹, Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences, Tokyo, Japan²)
- JM5 Multi-center cohort analysis deciphering an undefined subtype of congenital scoliosis: *TBX6*-associated congenital scoliosis (TACS)**
Nan Wu^{1,2,3,4}, Jiaqi Liu^{1,2}, Weiyu Li⁵, Kazuki Takeda^{6,7}, Kota Watanabe⁸, Sen Liu^{1,2,3}, Pengfei Liu⁴, Zhihong Wu^{2,3,8}, James R. Lupski^{4,9}, Feng Zhang⁵, Shiro Ikegawa⁹, Guixing Qiu^{1,2,3}
(Department of Orthopaedic Surgery, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences, Beijing 100730, China¹, Beijing Key Laboratory for Genetic Research of Skeletal Deformity, China², Medical Research Center of Orthopaedics, Chinese Academy of Medical Sciences³, Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX 77030, USA⁴, refer to pdf⁵, Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences, Tokyo 108-8639, Japan⁶, Japan Early Onset Scoliosis Research Group (JEOSRG)⁷, Department of Central Laboratory, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences, Beijing 100730, China⁸, Human Genome Sequencing Center, Department of Pediatrics and Texas Children's Hospital, Baylor College of Medicine, Houston, TX 77030, USA⁹)
- JM6 Genomic study for scoliosis**
Kazuki Takeda^{1,14}, Ikuyo Kou², Yoji Ogura^{1,14}, Noriaki Kawakami^{3,14}, Toshiaki Kotani^{4,14}, Hideki Sudo^{5,14}, Ikuho Yonezawa^{6,14}, Koki Uno^{7,14}, Hiroshi Taneichi^{8,14}, Kei Watanabe^{9,14}, Noriko Miyake^{1,10}, Shohei Minami^{4,14}, Hideki Shigematsu^{11,14}, Ryo Sugawara^{12,14}, Yuki Taniguchi^{13,14}, Masaya Nakamura^{1,14}, Morio Matsumoto^{1,14}, Kota Watanabe^{1,14}, Shiro Ikegawa²
(Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan¹, Laboratory of Bone and Joint Diseases, Center for Integrative Medical Sciences, RIKEN², Department of Orthopaedic Surgery, Meijo Hospital³, Department of Orthopaedic Surgery, Seirei Sakura Citizen Hospital⁴, Department of Advanced Medicine for Spine and Spinal Cord Disorders, Hokkaido University Graduate School of Medicine⁵, Department of Orthopedic Surgery, Juntendo University School of Medicine⁶, Department of Orthopaedic Surgery, National Hospital Organization Kobe Medical Center⁷, Department of Orthopaedic Surgery, Dokkyo Medical University⁸, Division of Orthopedic Surgery, Niigata University Graduate School of Medical and Dental Sciences⁹, Department of Human Genetics, Yokohama City University Graduate School of Medicine¹⁰, Department of Orthopaedic Surgery, Nara Medical University¹¹, Department of Pediatric Orthopedics, Jichi Children's Medical Center¹², Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo¹³, Japan Early Onset Scoliosis Research Group¹⁴)

Joint Symposium 4: JSBMR & Korean Society for Bone and Mineral Research(KSBMR) 14:55-16:25 Room 1 / TSUKUSHI 1 (3F)

Recent advances in research on bone and mineral metabolism

Chairs: Seiji Fukumoto (Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University)

Byun Dong Won (Soon Chun Hyang University Hospital/Chairman, Board of Directors of KSBMR (Korean Society for Bone and Mineral Research))

- JK1 Glucocorticoid-induced osteoporosis: mechanisms and perspectives**
Hyun-Ju Kim
(Department of Biomedical Science, Cell and Matrix Research Institute, School of Medicine, Kyungpook National University, Daegu, Korea)
- JK2 Inflammation and bone**
Asuka Terashima¹, Hiroshi Takayanagi²
(Department of Osteoimmunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan¹, Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan²)
- JK3 Atypical femoral fracture; where are we now?**
Kyu Hyun Yang
(Dept. of Orthopaedic Surgery, Yonsei University College of Medicine, Seoul, Korea)
- JK4 The mechanism of diabetes-related bone disease**
Ippei Kanazawa
(Internal Medicine 1, Shimane University Faculty of Medicine, Shimane, Japan)

Joint Symposium 5: JSBMR & Japanese Society for Bone Morphometry & The Japanese Orthopaedic Association 14:55-16:25 Room 2 / TSUKUSHI 2 (3F)

Pathophysiology and management of glucocorticoid-induced osteoporosis

Chairs: Satoshi Soen (Department of Orthopaedic Surgery and Rheumatology, Kindai University Nara Hospital)

Naoto Endo (Division of Orthopedic Surgery, Niigata University Graduate School of Medical and Dental Sciences)

- JB1 Steroid signaling and bone biology**
Toshihisa Komori
(Department of Cell Biology, Unit of Basic Medical Sciences, Medical and Dental Sciences, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan)
- JB2 Effects of glucocorticoid on bone tissue**
Shinya Tanaka
(Department of Orthopaedic Surgery, Saitama Medical University)
- JB3 Effects of anti-resorptive drugs on glucocorticoid-induced osteoporosis**
Yosuke Okada, Yoshiya Tanaka
(The First Department of Internal Medicine, University of Occupational and Environmental Health, JAPAN, Kitakyushu, Japan)
- JB4 Adverse effects of glucocorticoid from findings of atypical femora fracture**
Hiroe Sato
(Health Administration Center, Niigata University, Niigata, Japan)
- JB5 Effects of anabolic drugs on glucocorticoid-induced osteoporosis**
Mika Yamauchi
(Internal Medicine 1, Shimane University Faculty of Medicine, Izumo, Japan)

Chairs: Sakae Tanaka (Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)
Yoshiya Tanaka (The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health)

- M1 Progress in the research of calcium and bone metabolism : focused on the achievement by Dr.Takuo Fujita**
Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine)
- M2 Histomorphometry in Japan: past and present**
Naoto Endo
(Division of Orthopedic Surgery, Niigata University Graduate School of Medical and Dental Sciences)
- M3 Chasing the biological identity of chondrocytes**
Toshiyuki Yoneda
(Division of Hematology and Oncology, Indiana University School of Medicine, Indianapolis, IN, USA)
- M4 Contribution of Dr. Tatsuo Suda to bone biology**
Naoyuki Takahashi
(Matsumoto Dental University Institute for Oral Science, Shiojiri, Japan)
- M5 The 50-year history of the JSBMR and the contribution of Professor Etsuro Ogata**
Toshio Matsumoto
(Fujii Memorial Institute of Medical Sciences, Tokushima University)

Chair: Yasuhiro Takeuchi (Toranomon Hospital Endocrine Center)

- EEL1 The paradigm shift of hypophosphatemic rickets/osteomalacia treatment; the effect of anti-FGF23 antibody**
Yasuo Imanishi
(Department of Metabolism, Endocrinology and Molecular Medicine, Osaka City University Graduate School of Medicine, Osaka, Japan)

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The effects of TNF inhibitors on prevention for joint destruction

Chair: Takeshi Miyamoto (Department of Orthopaedic Surgery, Keio University School of Medicine)

- EEL2-1 How and why do anti-TNF treatment ameliorate bone and joint damages in rheumatoid arthritis?**
Jun Hashimoto
(National Hospital Organization, Osaka Minami Medical Center)
- EEL2-2 The effects of TNF inhibitors on prevention for joint destruction in spondyloarthritis**
Yuho Kadono
(Department of Orthopaedic Surgery, Saitama Medical University, Moroyama, Saitama, Japan)

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Meet the Expert 1 19:00-20:00

Room MTE 1 / ORCHILD ROOM (4F)

MTE1-1 How to write a paper

Hiroshi Takayanagi

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

MTE1-2 Tips for better chances to get your grants

Hiroshi Asahara

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

Meet the Expert 2 19:00-20:00

Room MTE 2 / ROSE ROOM (4F)

MTE2 Cartilage differentiation and treatment for cartilage damage

Noriyuki Tsumaki

(Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan)

Opening Remarks 18:00-18:05

Satoshi Soen (Department of Orthopaedic Surgery and Rheumatology, Nara Hospital Kinki University Faculty of Medicine)

Seesion I 18:05-18:35

Chair: Masako Ito (Nagasaki University Center for Diversity and Inclusion)

BU1-1 Combination therapy with ibandronate plus eldecalcitol improves bone mineral density and strength index for the proximal femur in postmenopausal Japanese women with osteoporosis

Junichi Takada^{1,2}, Hiroshi Wada³, Kousuke Iba², Takayuki Dohke², Megumi Hanaka², Takashi Yoshizaki¹, Toshihiko Yamashita²
(Kitago Orthopedic Clinic¹, Department of Orthopaedic Surgery, Sapporo Medical University², Wada Women's Clinic³)

BU1-2 The study of tolerability of alendronate oral jelly in postmenopausal women in real-world setting

Junichi Takada^{1,2}, Osamu Yamamoto³, Kousuke Iba², Takayuki Dohke², Megumi Hanaka², Takashi Yoshizaki¹, Toshihiko Yamashita²
(Kitago Orthopedic Clinic¹, Department of Orthopaedic Surgery, Sapporo Medical University², Ebetsu Yamamoto Orthopedics³)

BU1-3 Treatment with zoledronic acid for osteoporotic patients in clinical practice

Satoshi Ikeda
(Ken-Ai Memorial Hospital, orthopaedic surgeon)

Seesion II 18:35-19:05

Chair: Takumi Kurabayashi (Niigata City General Hospital, Department of Obstetrics and Gynecology/ Patient and Family Support Center)

BU2-1 Effect of osteoporosis medication on the changes in bone mineral density and bone turnover markers after 24-month administration of a daily teriparatide: Comparison among minodronate, raloxifene, and eldecalcitol

Shinichi Nakatoh
(Department of Orthopedic Surgery, Asahi General Hospital)

BU2-2 Risedronate therapy in patients with mild to moderate chronic kidney disease with osteoporosis

Kouji Okuda, Takashi Shigematsu
(Department of Nephrology, Wakayama Medical University)

BU2-3 Therapeutic effect of monthly minodronate in patients with type II diabetes mellitus-related osteoporosis

Kenji Ikuta
(The Department of Orthopedic Surgery, Daido Hospital)

Special Lecture 19:05-19:55

Chair: Keiichi Ozono (Department of Pediatrics, Osaka University Graduate School of Medicine)

BUS Mechanisms of action and clinical efficacy of aminobisphosphonates

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

Closing Remarks 19:55-20:00

Satoshi Soen (Department of Orthopaedic Surgery and Rheumatology, Nara Hospital Kinki University Faculty of Medicine)

Day2 Friday, July 28

Joint Symposium 6: JSBMR & Japanese Society of Nephrology 8:40-10:10
Room 1 / TSUKUSHI 1 (3F)

Recent Progresses in CKD-MBD-Research

Chairs: Seiji Fukumoto (Fuji Memorial Institute of Medical Sciences, Institute of
Advanced Medical Sciences, Tokushima University)
Masafumi Fukagawa (Tokai University School of Medicine)

- JN1 PTH and energy metabolism in patients with CKD**
Hirotaka Komaba
(Division of Nephrology, Endocrinology and Metabolism, Tokai University School of
Medicine)
- JN2 The relationship between Iron and mineral metabolism in CKD**
Takayuki Hamano
(Department of Comprehensive Kidney Disease (CKDR) Osaka University Graduate School
of Medicine)
- JN3 Bone fragility and alterations of osteocyte's function in chronic kidney disease**
Yoshiko Iwasaki
(Department of Health Sciences, Oita University of Nursing and Health Sciences, Oita, Japan)
- JN4 Treatment strategy for osteoporosis in CKD patients**
Junichiro James Kazama
(Department of Nephrology and Hypertension, Fukushima Medical University, Fukushima,
Japan)

JSBMR Committee Symposium 3 (Japan Muscle Society Joint Symposium) :
Muscles, Ligaments and Tendons 8:40-10:10 Room 2 / TSUKUSHI 2 (3F)

New paradigm of musculoskeletal research

Chairs: Hiroshi Asahara (Department of Systems BioMedicine, Tokyo Medical and
Dental University)
Chisa Shukunami (Department of Molecular Biology and Biochemistry,
Graduate School of Biomedical & Health Sciences
Hiroshima University)

- IP3-1 Skeletal Muscle Regulation by Androgen**
Yuuki Imai, Iori Sakakibara
(Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University, Ehime,
Japan)
- IP3-2 Muscle hypertrophy and muscle stem cells**
So-ichiro Fukada
(Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan)
- IP3-3 Mechanisms underlying immobilization-induced muscle atrophy**
Takeshi Miyamoto, Morio Matsumoto, Masaya Nakamura
(Department of Orthopaedic Surgery, Keio University School of Medicine)
- IP3-4 Role of Akt in muscle in the regulation of anti-aging**
Kohjiro Ueki
(Diabetes Research Center, Research Institute, National Center for Global Health and
Medicine, Tokyo, Japan)
- IP3-5 Mechano-metabo coupling - From skeletal muscle research to elucidation of
systemic energy control mechanism by inter-organ communications**
Hirotoshi Tanaka, Noriaki Shimizu, Noritada Yoshikawa
(Division of Rheumatology, Center for Antibody and Vaccine Therapy, IMSUT Hospital,
Institute of Medical Science, University of Tokyo)

Joint Symposium 7: JSBMR & The Japan Endocrine Society 10:10-11:40
Room 1 / TSUKUSHI 1 (3F)

Vitamin D deficiency: certainties and uncertainties

Chairs: Toshitsugu Sugimoto (Internal Medicine 1, Shimane University Faculty of Medicine)
Yasuhiro Takeuchi (Toranomon Hospital Endocrine Center)

- JE1 How to scientifically determine vitamin D sufficiency**
Seiji Fukumoto
(Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University, Tokushima, Japan)
- JE2 How vitamin D deficiency is involved in metabolic bone diseases**
Mika Yamauchi
(Internal Medicine 1, Shimane University Faculty of Medicine)
- JE3 Vitamin D deficiency in children in modern era**
Keiichi Ozono
(Department of Pediatrics, Osaka University Graduate School of Medicine)
- JE4 Is vitamin D deficiency involved in disorders other than those in bone and mineral metabolism?**
Ryo OKazaki
(Third Department of Medicine, Teikyo University Chiba Medical Center)

Joint Symposium 8: JSBMR & Japanese Association for Oral Biology 10:10-11:40
Room 2 / TSUKUSHI 2 (3F)

The Renaissance of hard tissue biology~Find the roots of bone, cartilage and tooth~

Chairs: Naoyuki Takahashi (Matsumoto Dental University Institute for Oral Science)
Riko Nishimura (Department of Molecular and Cellular Biochemistry, Osaka University Graduate School of Dentistry)

- JOB1 Recent topics on bone formation**
Takenobu Katagiri
(Division of Pathophysiology, Research Center for Genomic Medicine, Saitama University, Saitama, Japan)
- JOB2 Recent advances of epigenetic regulation in chondrogenesis**
Kenji Hata
(Department Molecular and Biochemistry, Osaka University Graduate School of Dentistry)
- JOB3 Molecular mechanism of ameloblast differentiation**
Satoshi Fukumoto
(Division of Pediatric Dentistry, Tohoku University Graduate School of Dentistry)
- JOB4 Regulatory mechanism in odontoblast differentiation and development**
Takashi Yamashiro
(Osaka University, Graduate School of Dentistry)
- JOB5 Potential of dental pulp cells as a resource for regenerative medicine**
Ken-ichi Tezuka
(Department of Tissue and Organ Development, Gifu University Graduate School of Medicine, Gifu, Japan)

Invited Lecture 1 11:40-12:40 Room 1 / TSUKUSHI 1 (3F)

Chair: Hideki Yoshikawa (Osaka University)

IL1 Current and future application of iPS cell research for bone and cartilage diseases

Junya Toguchida^{1,2}

(Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan¹, Center for iPS Cell Research and Application, Kyoto University, Kyoto., Japan²)

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Invited Lecture 2 11:40-12:40 Room 2 / TSUKUSHI 2 (3F)

Chair: Toshiyuki Yoneda (Division of Hematology and Oncology, Indiana University School of Medicine)

IL2 Glucocorticoid control of cortical bone resorption

Charles A. O'Brien, Piemontese Marilina, Xiong Jinhu, Fujiwara Yuko, Baltz Priscilla (University of Arkansas for Medical Sciences, and Central Arkansas Veterans Healthcare System, Little Rock, AR, USA)

Lunchtime Educational Lecture 5 12:50-13:50 Room 1 / TSUKUSHI 1 (3F)

Chair: Toshio Matsumoto (Fujii Memorial Institute of Medical Sciences, Tokushima University)

LEL5 Canonical Wnt signaling pathway and the role of sclerostin in bone metabolism

Chris Paszty

(Cardiometabolic Disorders Research, Amgen Inc.)

Sponsored by Amgen Astellas BioPharma K.K./ Astellas Pharma Inc.

Lunchtime Educational Lecture 6 12:50-13:50 Room 2 / TSUKUSHI 2 (3F)

Findings from Risedronate Phase III Trials in Japan

Chair: Toshitsugu Sugimoto (Internal Medicine 1, Shimane University Faculty of Medicine)

LEL6-1 Relationship between response to treatment with bisphosphonate and baseline characteristics including age, bone mineral density, vitamin D deficiency, and bone turnover markers

Taro Mawatari

(Department of Orthopaedic Surgery, Hamanomachi Hospital)

LEL6-2 Pathophysiology and treatment of osteoporosis associated with life style-related diseases

Daisuke Inoue

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

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Lunchtime Educational Lecture 7 12:50-13:50 Room 3 / SHIKA 1 (5F)

Chair: Hideki Yoshikawa (Osaka University)

LEL7-1 Prevention of osteoporotic fracture in elderly patients with diabetes

Mika Yamauchi

(Internal Medicine 1, Shimane University Faculty of Medicine)

LEL7-2 The Goal of Osteoporosis Treatment consideration to Drug Holiday(Basic Research to the Real Clinical Settings)

Nobukazu Okimoto

(Okimoto Clinic)

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Lunchtime Educational Lecture 8 12:50-13:50 Room 4 / SHIKA 2 (5F)

Chair: Akinori Sakai (Department of Orthopaedic Surgery, University of Occupational and Environmental Health)

LEL8 Vitamin D in pathogenesis and treatment of metabolic bone diseases

Yasuhiro Takeuchi
(Toranomon Hospital Endocrine Center, Tokyo, Japan)

Sponsored by Chugai Pharmaceutical Co., Ltd. / Taisho Toyama Pharmaceutical Co., Ltd.

Invited Lecture 3 14:00-15:00 Room 1 / TSUKUSHI 1 (3F)

Chair: Seiji Fukumoto (Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University)

IL3 Genomics and Bone: GWAS and Beyond

Emma Duncan
(Department of Endocrinology and Diabetes, Royal Brisbane and Women's Hospital / Queensland University of Technology / University of Queensland/ Australian and New Zealand Bone and Mineral Society)

Invited Lecture 4 14:00-15:00 Room 2 / TSUKUSHI 2 (3F)

Chair: Keiichi Ozono (Department of Pediatrics, Osaka University Graduate School of Medicine)

IL4 Recent Progress in Muscle Research

Shin'ichi Takeda
(National Institute of Neuroscience, National Center of Neurology and Psychiatry)

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JSBMR General Meeting Award Lectures 16:00-17:30 Room 1 / TSUKUSHI 1 (3F)

Chairs: Sakae Tanaka (Department of Orthopaedic Surgery, Faculty of Medicine, The University of Tokyo)
Yoshiya Tanaka (The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health)

**Joint Symposium 9: JSBMR & Japan Society of Nutrition and Food
Science 16:00-17:30 Room 2 / TSUKUSHI 2 (3F)**

**Strategies for the Promotion of Health and Physical Performance Based on Nutrition
and Food Sciences**

Chairs: Ritsuko Masuyama (Department of Molecular Bone Biology, Graduate
School of Biomedical Sciences, Nagasaki University)
Mariko Uehara (Department of Nutritional Science and Food Safety,
Tokyo University of Agriculture)

- JN1 Improvement of postprandial lipidemia by food-derived compounds**
Nobuyuki Takahashi, Mariko Uehara
(Department of Nutritional Science and Food Safety, Faculty of Applied Bioscience, Tokyo
University of Agriculture)
- JN2 Case study of nutritional support for junior athletes**
Kumiko Ebi
(Faculty of Sport and Health Science Ritsumeikan University Kusatsu, Shiga, Japan)
- JN3 Significance of physical activity and exercise from the viewpoint of energy
expenditure**
Shigeho Tanaka
(Department of Nutrition and Metabolism, National Institute of Health and Nutrition, National
Institutes of Biomedical Innovation, Health and Nutrition, Tokyo, Japan)
- JN4 Chrono-nutrition -Eating timing controls body clock and normal metabolism-**
Hiroaki Oda
(Laboratory of Nutritional Biochemistry, Nagoya University, Nagoya, Japan)

Evening Educational Lecture 3 18:10-19:10 Room 3 / SHIKA 1 (5F)

Chair: Shigeaki Kato (Iwaki Meisei University)

- EEL3 Autoantibodies driving bone loss in rheumatoid arthritis-mechanisms and
therapeutic implications**
Georg Schett
(Department of Internal Medicine 3, Friedrich Alexander University Erlangen-Nurnberg)
- Sponsored by Bristol-Myers Squibb K.K. / ONO PHARMACEUTICAL CO.,LTD.**

Evening Educational Lecture 4 18:10-19:10 Room 4 / SHIKA 2 (5F)

Chair: Riko Nishimura (Department of Molecular and Cellular Biochemistry,
Osaka University Graduate School of Dentistry)

- EEL4 The regulation of bone metabolism by bone marrow mesenchymal stem cells**
Toshihide Mizoguchi
(Institute for Oral Science, Matsumoto Dental University)
- Sponsored by Asahi Kasei Pharma Corporation**

Meet the Expert 3 18:10-19:10 Room MTE 1 / ORCHILD ROOM (4F)

- MTE3 Clinical Utility of high resolution peripheral QCT (HR-pQCT)**
Masako Ito
(Center for Diversity & Inclusion, Nagasaki University, Nagasaki, Japan)

Meet the Expert 4 18:10-19:10 Room MTE 2 / ROSE ROOM (4F)

- MTE4 Skeletal dysplasia: diagnosis, pathogenesis and treatment**
Keiichi Ozono
(Department of Pediatrics, Osaka University Graduate School of Medicine)

Day3 Saturday, July 29

Morning Educational Lecture 1 8:30-9:30

Room 3 / SHIKA 1 (5F)

Positioning of TNF inhibitors in the treatment of rheumatoid arthritis

Chair: Shingo Nakayamada (The First Department of Internal Medicine,
University of Occupational and Environmental
Health, Japan)

MEL1-1 Treatment strategy for elderly rheumatoid arthritis patients - possibility of selecting anti-TNF inhibitors -

Tamami Yoshitama
(Yoshitama Clinic for Rheumatic Diseases, Kagoshima, Japan)

MEL1-2 Practice of bio-tight control for patients with rheumatoid arthritis in our hospital

Toshihiko Hidaka
(Insutitution of Rheumatology, Zenjinkai Shimin-no-Mori Hospital, Miyazaki, JAPAN)

Sponsored by Mitsubishi Tanabe Pharma Corporation

Morning Educational Lecture 2 8:30-9:30

Room 4 / SHIKA 2 (5F)

Chair: Norio Amizuka (Department of Developmental Biology of Hard Tissue,
Division of Oral Health Science, Graduate School of
Dental Medicine, Hokkaido University)

MEL2 Current status and future of osteoporosis treatment

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

Sponsored by AYUMI Pharmaceutical Corporation

Invited Lecture 5 9:40-10:40

Room 1 / TSUKUSHI 1 (3F)

Chair: Masako Ito (Center for Diversity & Inclusion, Nagasaki University)

IL5 Fracture prevention prospects: targeted approaches to identify, treat, and monitor fracture risk in patients with rheumatic diseases

Claus-Christian Glüer
(Section Biomedical Imaging, Department of Radiology and Neuroradiology, Christian-
Albrechts-Universität zu Kiel, Germany)

Sponsored by Janssen Pharmaceutical K.K. / Mitsubishi Tanabe Pharma Corporation

Biology and pathology of skeleton

Chairs: Noriyuki Tsumaki (Center for iPS Cell Research and Application, Kyoto University)

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

IP4-1 Regulatory mechanisms and regulatory factors of cartilage degeneration

Takehiko Matsushita, Kyohei Nishida, Toshikazu Tanaka, Nobuaki Miyaji, Kazuyuki Ibaraki, Takahiro Yamashita, Yuji Hiroshima, Daisuke Araki, Noriyuki Kanzaki, Yuichi Hoshino, Ryosuke Kuroda

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

IP4-2 Potential involvement of oxidative stress in intervertebral disc degeneration

Nobuyuki Fujita¹, Satoshi Suzuki², Takeshi Fujii¹, Kota Watanabe¹, Naobumi Hosogane³, Takashi Tsuji⁴, Ken Ishii⁵, Keisuke Horiuchi³, Takeshi Miyamoto¹, Masaya Nakamura¹, Morio Matsumoto¹

(The Department of Orthopaedic Surgery, Keio University School of Medicine¹, Department of Orthopaedic Surgery, Tokyo Dental College Ichikawa General Hospital², Department of Orthopaedic Surgery, National Defense Medical College³, Department of Orthopaedic Surgery, Fujita Health University⁴, Department of Orthopaedic surgery, International University of Health and Welfare⁵)

IP4-3 The control of the transcription factors of annulus fibrosus

Ryo Nakamichi¹, Hiroshi Asahara², Toshifumi Ozaki¹

(Department of Orthopaedic Surgery, Okayama University Hospital¹, Department of Systems Biomedicine, Tokyo Medical and Dental University²)

Invited Lecture 6 10:40-11:40

Room 1 / TSUKUSHI 1 (3F)

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

IL6 Bone loss in rheumatoid arthritis patients-why cytokines such as IL-6 matter

Georg Schett

(Department of Internal Medicine 3, Friedrich Alexander University Erlangen-Nurnberg)

Sponsored by Chugai Pharmaceutical Co., Ltd.

Joint Symposium 10: JSBMR & Japanese Society of Oral and Maxillofacial Surgeons 11:10-12:40 Room 2 / TSUKUSHI 2 (3F)

Beyond Drug Holiday: Search for approaches to prevent and decrease ONJ development without drug holidays

Chairs: Toshiyuki Yoneda (Division of Hematology and Oncology, Indiana University School of Medicine)
Riko Nishimura (Department of Molecular and Cellular Biochemistry, Osaka University Graduate School of Dentistry)

- JOM 1 Pathogenic mechanisms of ONJ and development of treatment strategies**
Shinichiro Kuroshima^{1,2}
(Division of Oral Implantology, Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki, Japan¹, Oral & Maxillofacial Implant Center, Nagasaki University Hospital, Nagasaki, Japan²)
- JOM 2 Necessity of antiresorptive agents in osteoporosis treatment**
Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine)
- JOM 3 Bone modifying agents for breast cancer treatment**
Takashi Ishikawa¹, Daichi Chikazu²
(Department of Breast Oncology and Surgery, Tokyo Medical University¹, Department of Oral and Maxillofacial Surgery, Tokyo Medical University²)
- JOM 4 Corresponding to anti-resorptive agents-related ONJ (ARONJ)**
Yoshihide Ota
(Department of Oral and Maxillofacial Surgery, Division of Surgery, Tokai University, School of Medicine)

Invited Lecture 7 11:40-12:40 Room 1 / TSUKUSHI 1 (3F)

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

- IL7 Osteoporosis and the bone-forming drug**
Hiroshi Takayanagi
(Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan)

Sponsored by Eli Lilly Japan K.K.

Lunchtime Educational Lecture 9 13:00-14:00 Room 1 / TSUKUSHI 1 (3F)

Chair: Seiji Fukumoto (Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University)

- LEL9 Bone anabolic agents for the treatment of osteoporosis at high risk of fractures**
Naohisa Miyakoshi
(Department of Orthopedic Surgery, Akita University Graduate School of Medicine, Akita, Japan)

Sponsored by Eli Lilly Japan K.K.

Lunchtime Educational Lecture 10 13:00-14:00 Room 2 / TSUKUSHI 2 (3F)

Chair: Atsushi Kumanogo (Osaka University)

- LEL10 Treatment strategy for osteoporosis associated with diabetes mellitus**
Ryo Okazaki
(Third Department of Medicine, Teikyo University Chiba Medical Center)

Sponsored by Daiichi Sankyo Co., Ltd.

Chair: Shiro Ikegawa (Laboratory for Bone and Joint Diseases, RIKEN Center for Integrative Medical Sciences)

LEL11 Fracture prevention in internal medicine practice: a pragmatic approach to patients with various comorbidities

Daisuke Inoue

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

Sponsored by Chugai Pharmaceutical Co., Ltd.

Rising Stars in Skeletal Biology

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

Yuuki Imai (Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University)

IP5-1 Osteoblast ablation induced by acute inflammation leads to immunodeficiency

Asuka Terashima

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

IP5-2 Molecular and cellular regulation of skeletal muscle regeneration

Ono Yusuke

(Musculoskeletal Molecular Biology Research Group, Basic and Translational Research Center for Hard Tissue Disease, Nagasaki University Graduate School of Biomedical Sciences)

IP5-3 Development of novel anti-myeloma agents with potent bone anabolic actions

Jumpei Teramachi

(Department of Histology and Oral Histology, Tokushima University, Tokushima, Japan)

Inflammation and regeneration in bone and joint diseases

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

JIR1 Application of stem cells for the research of bone pathology

Junya Toguchida^{1,2}

(Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan¹, Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan²)

JIR2 Regenerative therapy for articular cartilage damage by allogeneic iPSC-derived cartilage

Noriyuki Tsumaki

(Center for iPS Cell Research and Application, Kyoto University, Kyoto, Japan)

JIR3 Immune and bone metabolic abnormalities in DCIR-deficient mice

Yoichiro Iwakura

(Research Institute for Biomedical Sciences, Tokyo University of Science, Chiba, Japan)

JIR4 Genetic and post-genetic analyses of rheumatoid arthritis

Kazuhiko Yamamoto

(Laboratory for Autoimmune Diseases, RIKEN center for Integrative Medical Sciences, Yokohama, Japan)

Luncheon Seminar 13:00-13:45

Chair: Riko Nishimura (Department of Molecular and Cellular Biochemistry,
Osaka University Graduate School of Dentistry)

- JLS Recent progress in research of gene regulations by sex steroids and vitamin A/D**
Shigeaki Kato^{1,2}
(Center for regional cooperation, Iwaki Meisei University¹, Research Institute of Innovative
medicine, Tokiwa Foundation²)

Oral 34 Cancers and bone diseases 2 13:50-14:40

Chairs: Takeshi Imamura (Department of Molecular Medicine for Pathogenesis,
Ehime University Graduate School of Medicine)
Kenji Hata (Osaka University Graduate School of Dentistry)

- O-200 Myeloma Cells Induce High Level of TAF12 Expression in Bone Marrow Stromal Cells, Resulting in Increased Osteoclastogenesis and Myeloma Cell Growth in Response to 1,25(OH)2D3**
Yasuhisa Ohata^{1,2,3}
(Medicine/Hematology-Oncology, Indiana University¹, Department of Oral and Maxillofacial
Surgery 1 Osaka University Graduate school of dentistry², Department of Pediatrics Osaka
University Graduate School of Medicine³)
- O-201 Control of breast cancer aggressiveness in bone by TRPV1 via increasing HGF production by sensory nerves**
Tatsuo Okui^{1,2}, Masahiro Hiasa^{2,3}, Tsuyoshi Shimo⁴, Akira Sasaki⁴, Toshiyuki Yoneda^{2,5}
(Department of Oral and Maxillofacial Surgery Okayama University Hospital¹, Department of
Medicine, Hematology/Oncology, Indianapolis, IN, USA², Department of Biomaterials and
Bioengineerings, University of Tokushima Graduate School of Dentistry, Tokushima, Japan³,
Department of Oral and Maxillofacial Surgery and Biopathology, Okayama University
Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama, Japan⁴,
Department of Biochemistry Osaka University of Graduate. School of Dentistry, Osaka,
Japan⁵)
- O-202 The expression and role of Neurokinin B/ Neurokinin 3 receptor in oral squamous cell carcinoma**
Kyoichi Obata¹, Tsuyoshi Shimo^{1,2}, Tatsuo Okui², Soichiro Ibaragi¹, Yuki Kunisada²,
kenichi Matsumoto³, Akira Sasaki^{1,2}
(Department of Oral and Maxillofacial Surgery, Okayama University Graduate School of
Medicine, Dentistry, and Pharmaceutical Sciences¹, Okayama University Hospital,
Department of Oral and Maxillofacial Surgery (Biopathology)², Division of Oral and
Maxillofacial Surgery, Kagawa Prefectural Central Hospital³)
- O-203 Targeting the Vacuolar Proton pump and ASIC3 Decreases Multiple Myeloma-induced Bone Pain**
Masahiro Hiasa^{1,2}, Tatsuo Okui^{1,3}, Toshiyuki Yoneda^{1,4}
(Department of Hematology/Oncology, Indiana University School of Medicine, Indianapolis,
USA¹, Department of Biomaterials and Bioengineerings, Tokushima University Graduate
School, Tokushima, Japan², Department of Oral and Maxillofacial Surgery and Biopathology,
Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences,
Okayama, Japan³, Department of Molecular and Cellular Biochemistry, Osaka University
Graduate School of Dentistry, Osaka, Japan⁴)

O-204 Osteoclasts utilize TRAIL for their activation, which is subverted by TAK1 inhibition to trigger apoptosis in osteoclasts as well as myeloma cells by TRAIL

Hirofumi Tenshin¹, Jumpei Teramachi², Asuka Oda³, Ryota Amachi¹, Masahiro Hiasa⁴, Keiichiro Watanabe¹, Baterdene Ariunzaya³, Masami Iwasa³, Shiro Fujii³, Kumiko Kagawa³, Shingen Nakamura³, Hirokazu Miki³, Itsuro Endo³, Eiji Tanaka¹, Toshio Matsumoto⁵, Masahiro Abe³

(Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School¹, Department of Histology and Oral Histology, Institute of Biomedical Sciences, Tokushima University Graduate School², Department of Hematology, Endocrinology and Metabolism, Institute of Biomedical Sciences, Tokushima University Graduate School³, Department of Biomaterials and Bioengineering, Institute of Biomedical Sciences, Tokushima University Graduate School⁴, Fujii Memorial Institute of Medical Sciences, Tokushima University⁵)

Mini-Symposium : Cancer and Bone Diseases 14:40-15:40

Chairs: Akira Yamaguchi (Tokyo Dental College Oral Health Science Center)
Toshiyuki Yoneda (Division of Hematology and Oncology, Indiana University School of Medicine)

JmS-1 Breast Cancer and Bone Metastasis

Takashi Ishikawa
(Department of Breast Oncology and Surgery, Tokyo Medical University)

JmS-2 Change in bone quality in cancer metastasis

Takayoshi Nakano, Aira Matsugaki, Aiko Sekita
(Division of Materials & Manufacturing Science, Graduate School of Engineering, Osaka University)

JmS-3 Abnormality of tumor blood vessels and cancer progression

Kyoko Hida
(Vascular Biology, Frontier Research Unit, Institute for Genetic Medicine, Hokkaido University, Japan)

JmS-4 Hematologic neoplasms and bone marrow microenvironments

Yuya Kunisaki
(Department of Stem Cell Biology and Medicine/Cancer Stem Cell Research, Kyushu University Graduate School of Medical Sciences)

Sponsored by 35JSBMR / Japan Society for Cancer and Bone Diseases

Day1 Thursday, July 27

Oral 1 Bone resorption 1 9:10-10:10

Room 3 / SHIKA 1 (5F)

Chairs: Nobuyuki Udagawa (Department of Biochemistry, Matsumoto Dental University)

Keizo Nishikawa (IFReC, Osaka University)

- O-001 Effects of anti-RANKL antibody (OYC1TM) on pregnant mice and fetustheir newborns**
Nobuhiro Sakai¹, Nobuaki Okamatsu², Takako Koga¹, Akiko Karakawa¹, katsunori Inagaki², Masamichi Takami¹
(Department of Pharmacology, School of Dentistry, Showa University¹, Department of Orthopedic Surgery, School of Medicine, Showa University²)
- O-002 Alpha7nAChR regurates osteoclast via suppression of OPG/RANKL ratio**
Kazuaki Mito, Takeshi Miyamoto, Kazuki Sato, Morio Matsumoto, Masaya Nakamura
(Department of Orthopaedic Surgery, Keio University, Tokyo, Japan)
- O-003 Functional analysis of a novel splicing variant of receptor activator of NF-kB**
Riko Kitazawa¹, Yuma Karachi², Yasuhiro Kobayashi³, Sohei Kitazawa²
(Ehime University Hospital, Department of Diagnostic Pathology, Toon, Ehime, Japan¹, Ehime University Graduate School of Medicine, Dept. of Molecular Pathology, Toon, Ehime, Japan², Institute of Oral Science, Matsumoto Dental University, Shiojiri, Nagano, Japan³)
- O-004 Advanced glycation end product-3 (AGE-3) inhibits osteoclast differentiation via suppressed or induced expression of RANK or IL-10**
Kenichi Tanaka¹, Kaoru Yamagata¹, Satoshi Kubo¹, Shingo Nakayamada¹, Kei Sakata^{1,2}, Yosuke Okada¹, Yoshiya Tanaka¹
(First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Kitakyushu, Japan¹, Mitsubishi Tanabe Pharma Corporation 1000, Yokohama, Japan²)
- O-005 Musashi2, RNA-binding protein, induced by RANKL is critical for osteoclast survival**
Fujiwara Toshifumi^{1,2}, Yasuharu Nakashima¹, Haibo Zhao²
(Department of Orthopaedic Surgery, Kyushu University, Fukuoka, Japan¹, Center for Osteoporosis and Metabolic Bone Diseases, University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA²)
- O-006 The influences after discontinuation of anti-resorptive agents on bone turnover in ovariectomized mice: a comparison between risedronate and anti-RANKL antibody**
Toshinobu Omiya, Jun Hirose, Takeshi Miyamoto, Sakae Tanaka
(Department of Orthopaedic Surgery, The University of Tokyo)

Chairs: Koichi Matsuo (Keio University School of Medicine)
 Eiichi Hinoi (Laboratory of Molecular Pharmacology, Division of
 Pharmaceutical Sciences, Kanazawa University Graduate
 School)

- O-007 Cortical bone loss due to skeletal unloading in aldehyde dehydrogenase 2 gene knockout mice is associated with decreased expression of PTH receptors in osteocytes**
 Takafumi Tajima, Kunitaka Menuki, Kayoko Ohkuma, Manabu Tsukamoto, Hokuto Fukuda, Yasuaki Okada, Akinori Sakai
 (Department of Orthopaedic Surgery, University of Occupational and Environmental Health, Fukuoka, Japan)
- O-008 Effect of mechanical repetitive loading on bone quality around implants in rat maxillae**
 Yusuke Uto¹, Shinichiro Kuroshima², Yusuke Uchida¹, Takuya Ishimoto³, Takayoshi Nakano³, Takashi Sawase¹
 (Division of Oral Implantology, Department of Applied Prosthodontics, Graduate School of Biomedical Sciences, Nagasaki University, Japan¹, Nagasaki University Hospital, Oral and Maxillofacial Implant Center, Japan², Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Osaka, Japan³)
- O-009 Runx2/mTORC2 signal regulates osteoblast proliferation and differentiation on tension side of orthodontic tooth movement in Runx2^{-/-} mice**
 Tomo Aonuma¹, Tomohiro Fukunaga¹, Hideki Kitaura¹, Nobuo Takeshita¹, Takashi Yamashiro², Teruko Yamamoto¹
 (Division of Orthodontics and Dentofacial Orthopedics, Tohoku University Graduate school of Dentistry, Sendai, Japan¹, Department of Orthodontics and Dentofacial Orthopedics, Osaka University Graduate School of Dentistry, Osaka, Japan²)
- O-010 Analysis of bone tissue of space-flight mice**
 Masahiro Shinohara^{1,2,3}, Takashi Kudo^{3,4}, Miki Shimbo^{3,4}, Dai Shiba³, Masaki Shirakawa³, Satoru Takahashi^{3,4}, Hiroshi Asahara^{1,3}
 (Department of Systems BioMedicine, Tokyo Medical and Dental University, Tokyo, Japan¹, JST, PRESTO², Mouse Epigenetics Project, ISS/Kibo experiment, JAXA, Japan³, Department of Anatomy and Embryology, Faculty of Medicine, University of Tsukuba, Ibaraki, Japan⁴)
- O-011 Recombinant sclerostin inhibits mineral accretion and increases osteocyte lacunar size in trabecular bone mechanically loaded ex vivo**
 Masakazu Kogawa
 (Department of Orthopaedic Surgery, Matsuda Hospital, Miyagi, Japan)
- O-012 Mechanical stress by spasticity accelerates fracture healing after spinal cord injury**
 Naoyoshi Sakitani¹, Masato Nomura¹, Hiroyuki Iwasawa¹, Yoshio Wakimoto¹, Hideki Moriyama²
 (Graduate school of Health Sciences, Kobe University, Hyogo, Japan¹, Life and Medical Sciences Area, Health Sciences Discipline, Kobe University, Hyogo, Japan²)

Chairs: Yasuhiro Kobayashi (Matsumoto Dental University Institute for Oral Science)

Akiko Kukita (Department of Pathology and Microbiology, Faculty of Medicine, Saga University)

- O-013 Antiresorptive activity of a cathepsin K inhibitor ONO-5334 and its relationship to BMD increase in a phase II trial for postmenopausal osteoporosis**
 Makoto Tanaka¹, Yoshitaka Hashimoto², Chihiro Hasegawa², Deacon Steve³, Eastell Richard⁴
 (Research Promotion, Ono Pharmaceutical Co.,Ltd., Osaka, Japan¹, TMC, Ono Pharmaceutical Co.,Ltd., Osaka, Japan², Ono Pharma UK Ltd.,³, University of Sheffield⁴)
- O-014 Roles of Wnt5a-Ror2 signaling in pathological mouse models**
 Shunsuke Uehara¹, Teruhito Yamashita², Takashi Nakamura³, Shigeaki Kato⁴, Nobuyuki Udagawa¹, Naoyuki Takahashi², Yasuhiro Kobayashi²
 (Department of Biochemistry, Matsumoto Dental University, Shiojiri, Japan¹, Institute for Oral Science, Matsumoto Dental University, Shiojiri, Japan², Department of Biochemistry, School of Medicine, Keio University, Tokyo, Japan³, Joban Hospital, Tokiwakai Group, Fukushima, Japan⁴)
- O-015 Magnesium-dependent functional role of two pore channel 2 (TPC2) during osteoclastogenesis**
 Takuya Notomi^{1,2,3}, Miyuki Kuno⁴, Yoichi Ezura², Kiyoshi Ohura¹, Masaki Noda^{2,3}
 (Department of Pharmacology, Osaka Dental University, Osaka, Japan¹, Department of Molecular Pharmacology, Medical Research Institute, Tokyo Medical and Dental University, Tokyo, Japan², Global Center of Excellence Program for Molecular Science for Tooth and Bone Diseases, Tokyo Medical and Dental University, Tokyo, Japan³, Molecular and Cellular Physiology, Graduate School of Medicine, Osaka City University, Osaka, Japan⁴)
- O-016 A novel actin binding protein PPP1r18 regulates actin ring formation and bone resorption in osteoclasts**
 Takuma Matsubara, Chihiro Nakatomi, Shoichiro Kokabu, Eijiro Jimi
 (Division of Molecular Signaling and Biochemistry, Department of Health Improvement, Kyushu Dental University)
- O-017 CXCR4⁺CD45⁻ Cells Enhance Osteoclastogenesis via the SDF-1, CXCL7, and CX3CL1 Signaling Pathways**
 Otsuka Yuto¹, Yoh Goto², Takeo Sekiya², Masataka Asagiri¹, Ken Miyazawa², Mineyoshi Aoyama¹
 (Department of Pathobiology, Nagoya City University, Nagoya, Japan¹, Department of Orthodontics, Aichi-Gakuin University, Nagoya, Japan²)
- O-018 Curdlan inhibits osteoclast formation by degradation of syk protein**
 Wataru Ariyoshi, Tatsuji Nishihara
 (Division of Infections and Molecular Biology, Department of Health Promotion, Kyushu Dental University, Kitakyushu, Fukuoka, Japan)

Chairs: Mikihito Hayashi (Department of Cell Signaling, Tokyo Medical and Dental University)

Kunitaka Menuki (Department of Orthopedic Surgery, School of Medicine, University of Occupational and Environmental Health)

- O-019 Effects of gravity change on the gene levels in anti-gravity muscle and bone : role of vestibular system**
 Naoyuki Kawao¹, Hironobu Morita², Kazuaki Nishida¹, Koji Obata², Masayoshi Ishida¹, Kohei Tatsumi¹, Hiroshi Kaji¹
 (Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine, Osaka, Japan¹, Department of Physiology, Gifu University Graduate School of Medicine, Gifu, Japan²)
- O-020 Effects of joint unloading and immobilization on articular cartilage and subchondral bone in mice**
 Masato Nomura¹, Naoyoshi Sakitani¹, Yoshio Wakimoto¹, Hiroyuki Iwasawa^{1,2}, Hideki Moriyama³
 (Department of Rehabilitation Science, Graduate School of Health Sciences, Kobe University, Kobe, Japan¹, Department of Rehabilitation, St. Marianna University School of Medicine, Kawasaki, Japan², Kobe University, Life and Medical Sciences Area, Health Sciences Discipline, Kobe, Japan³)
- O-021 Mechanical loading regulates environments of extracellular fluid during long bone growth**
 Satoshi Miyamoto^{1,2}, Ken Nakata¹, Hideki Yoshikawa²
 (Department of Health and Sport Sciences, Osaka University Graduate School of Medicine Osaka, Japan¹, Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine²)
- O-022 Impact activity during youth is an important factor for peak bone mass**
 Hitoshi Fukushima
 (Department of Social-Human Environmentology , University of Daito Bunka, Tokyo, Japan)
- O-023 Effect of mechanical stress on hedgehog signaling in osteoblast**
 Kenichi Matsumoto, Tsuyoshi Shimo, Tatsuo Okui, Naito Kurio, Souichirou Ibaragi, Yuuki Kunisada, Akira Sasaki
 (Department of Oral and Maxillofacial Surgery, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan)
- O-024 The effect of chronic resistance training on bone tissue in type 2 diabetes model rat**
 Aoi Ikedo¹, Kohei Kido¹, Satoru Ato¹, Koji Sato², Yuuki Imai³, Satoshi Fujita¹
 (Graduate School of Sport and Health Science, Ritsumeikan University, Shiga, Japan¹, Graduate School of Human Development and Environment, Kobe University, Kobe, Japan², Division of Integrative Pathophysiology Proteo-Science Center, Ehime University, Ehime, Japan³)

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

Masahiro Shinohara (Tokyo Medical and Dental University)

- O-025 Staphylococcus aureus enhance the differentiation of osteoclasts via formation of IgG complex with protein A**
 Asana Kamohara^{1,2}, Xianghe Xu^{1,3}, Makoto Shiraki^{1,4}, Akiko Kukita¹
 (Department of Microbiology, Faculty of Medicine, Saga University, Saga, Japan¹, Department of Oral&Maxillofacial Surgery, Faculty of Medicine, Saga University, Saga, Japan², Department of Molecular Cell Biology & Oral Anatomy, Kyusyu University³, Department of Orthopaedic Surgery, Faculty of Medicine, Saga University⁴)
- O-026 The effect of myostatin inhibition on bone loss in murine osteoporosis models**
 Tomoyuki Mukai¹, Takafumi Mito¹, Shunichi Fujita¹, Shoko Kodama¹, Akiko Nagasu¹, Teruki Sone², Yoshitaka Morita¹
 (Kawasaki Medical School, Kurashiki, Japan¹, Kawasaki Medical School, Kurashiki, Japan²)
- O-027 Construction of novel screening system using suicide gene and identification of inhibitors for osteoclast differentiation**
 Yuu Taguchi, Jun-ichiro Inoue
 (Division of Cellular and Molecular Biology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan)
- O-028 Influence of the duration of sunlight on raloxifene treatment**
 Rui Niimi¹, Toshibumi Kono¹, Toshihiko Kono¹, Akihiro Sudo²
 (Department of Orthopaedic Surgery, Tomidahama Hospital, Mie, Japan¹, Department of Orthopaedic Surgery, Mie University Graduate School of Medicine²)
- O-029 Tankyrase inhibitor enhances osteoclast differentiation and induces bone loss: potential adverse effect**
 Shunichi Fujita¹, Tomoyuki Mukai¹, Takafumi Mito¹, Shoko Kodama¹, Akiko Nagasu¹, Teruki Sone², Yoshitaka Morita¹
 (Department of Rheumatology, Kawasaki Medical School, Kurashiki, Japan¹, Department of Nuclear Medicine, Kawasaki Medical School, Kurashiki, Japan²)
- O-030 Nedd4 adaptor protein Pmepa1 is induced by bone components and involved in bone resorption**
 Xianghe Xu^{1,2}, Makoto Shiraki^{1,3}, Asana Kamohara^{1,4}, Toshio Kukita², Akiko Kukita¹
 (Department of Microbiology, Faculty of Medicine, Saga University, Saga, Japan¹, Department of Molecular Cell Biology & Oral Anatomy, Faculty of Dentistry, Kyushu University², Department of Orthopaedic Surgery, Faculty of Medicine, Saga University³, Department of Oral & Maxillofacial Surgery, Faculty of Medicine, Saga University⁴)

Chairs: Hiroshi Kamioka (Department of Orthodontics, Graduate School of
Medicine, Dentistry and Pharmaceutical Sciences)

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

- O-031 Regulation of bone metabolism through osteocyte-derived Sema3A**
Mikihito Hayashi¹, Tomoki Nakashima^{1,2}, Hiroshi Takayanagi³
(Department of Cell Signaling, Graduate School of Medical and Dental Sciences, Tokyo
Medical and Dental University¹, Japan Agency for Medical Research and Development, Core
Research for Evolutional Science and Technology (AMED-CREST)², Department of
Immunology, Graduate School of Medical and Faculty of Medicine, The University of
Tokyo³)
- O-032 Analysis of the role of bone matrix phosphorylation in Fam20C-transgenic mice**
Katsutoshi Hirose¹, Yu Usami¹, Sunao Sato¹, Kaori Oya¹, Toshihisa Komori²,
Satoru Toyosawa¹
(Department of Oral Pathology, Osaka University Graduate School of Dentistry, Osaka,
Japan¹, Department of Cell Biology, Unit of Basic Medical Sciences, Nagasaki University
Graduate School of Biomedical Sciences, Nagasaki, Japan²)
- O-033 Inhibition of glucose transporter decreases expression of osteocalcin and RANKL by activation of AMP-activated protein kinase and suppression of MAPK pathways in osteocytes**
Ayumu Takeno, Ippei Kanazawa, Masakazu Notsu, Ken-ichiro Tanaka, Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine, Izumo, Japan)
- O-034 Differentiation and dedifferentiation between osteoblasts and osteocytes depend upon the cell culture condition**
Naruhiko Sawa, Ituki Taniguchi, Junro Yamasita
(Fukuoka Dental College Oro-Facial Plastic Surgery)
- O-035 CCN2 from osteocytes plays an important role in osteoclastogenesis and bone remodeling, compared with that from bone marrow cells in aged mice**
Takashi Nishida¹, Satoshi Kubota^{1,2}, Hedeki Yokoi³, Masashi Mukoyama⁴
(Department of Biochemistry and Molecular Dentistry, Okayama University Graduate School
of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan¹, Advanced Research
Center for Oral and Craniofacial Sciences, Okayama University Dental School, Okayama,
Japan², Department of Nephrology, Graduate School of Medicine, Kyoto University Hospital,
Kyoto, Japan³, Department of Nephrology, Graduate School of Medical Sciences, Kumamoto
University, Kumamoto, Japan⁴)

Chairs: Haruhiko Akiyama (Department of Orthopedics, Gifu University)
Satoshi Kubota (Department of Biochemistry and Molecular Dentistry,
Okayama University Graduate School of Medicine,
Dentistry and Pharmaceutical Sciences)

- O-036 Epigenetic regulator, Uhrf1, controls the chondrocyte differentiation and skeletal formation mediated with regulation in DNA methylation**
Michiko Yamashita^{1,2}, Kazuki Inoue^{1,3}, noritaka saeki^{1,3}, Iori Sakakibara¹, Jiwon Lee⁴, maky otsuka⁶, yoshiaki kamei², katsuhide igarashi⁶, yasutsugu takada², tadahiro iimura^{4,5}, yuuki imai¹
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- O-037 Pathogenesis of the Inherited Skeletal Overgrowth Disorder Caused by Activating Mutations in Natriuretic Peptide Receptor B**
Keiko Yamamoto^{1,2}, Masanobu Kawai¹, Miwa Yamazaki¹, Kanako Tachikawa¹, Takuo Kubota², Keiichi Ozono², Toshimi Michigami¹
(Department of Bone and Mineral Research, Research Institute, Osaka Prefectural Hospital Organization, Osaka Women's and Children's Hospital, Izumi, Japan¹, Department of Pediatrics, Osaka University Graduate School of Medicine, Suita, Japan²)
- O-038 The effectiveness of C-type natriuretic peptide for midfacial hypoplasia occurring in achondroplasia model mouse 3rd report**
Shigeki Yamanaka¹, Kazumasa Nakao¹, Akihiro Yasoda², Yu Isobe¹, Noriaki Koyama¹, Masako Miura³, Nobuya Inagaki², Kazuwa Nakao⁴, Kazuhisa Bessho¹
(Department of Oral and Maxillofacial Surgery, University of Kyoto, Kyoto, Japan¹, Department of Diabetes and Clinical Nutrition, University of Kyoto, Kyoto, Japan², Endocrinology, Rakuwakai Otowa Hospital, Kyoto, Japan³, Medical Innovation Center, University of Kyoto, Kyoto, Japan⁴)
- O-039 Meclozine treatment for bone growth and bone quality in mouse model with achondroplasia**
Masaki Matsushita¹, Hiroshi Kitoh¹, Kenichi Mishima¹, Akiko Kitamura¹, Tadashi Nagata¹, Naoki Ishiguro¹, Kinji Ohno²
(Department of Orthopaedic Surgery, Nagoya University Graduate School of Medicine, Nagoya, Japan¹, Division of Neurogenetics, Center for Neurological Diseases and Cancer, Nagoya University Graduate School of Medicine, Nagoya, Japan²)
- O-040 Long-Term Growth Hormone Treatment Augments Final Height in Patients with Achondroplasia**
Daisuke Harada, Hiroko Kashiwagi, Natsuko Sakamoto, Kawai Kondo, Kanako Kishimoto, Masafumi Izui, Yuiko Nagamatsu, Yoshiki Seino, Noriyuki Namba
(Department of Pediatrics, Japan Community Healthcare Organization (JCHO) Osaka Hospital, Osaka, Japan)
- O-041 The role of NF-kB alternative pathway in endochondral ossification**
Chihiro Nakatomi, Shoichiro Kokabu, Takuma Matsubara, Eijiro Jimi
(Division of Molecular Signaling and Biochemistry, Kyushu Dental University, Kitakyushu, Japan)

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

Shozo Yano (Shimane University, Department of Laboratory Medicine)

- O-042 Efficacy and assignments of enzyme replacement therapy in patients with hypophosphatasia (HPP): Results from a Japanese clinical trial**
 Taichi Kitaoka¹, Toshimi Michigami², Ikuma Fujiwara³, Masayuki Kokaji⁴, Hiroshi Mochizuki⁵, Takuo Kubota¹, Keiichi Ozono¹
 (Department of Pediatrics, Osaka University Graduate School of Medicine, Osaka, Japan¹, Department of Bone and Mineral Research, Research Institute, Osaka Prefectural Hospital Organization, Osaka Women's and Children's Hospital, Izumi, Japan², Department of Pediatric Endocrinology and Environmental Medicine, Tohoku University Graduate School of Medicine, Miyagi, Japan³, Department of Pediatrics, Showa General Hospital, Tokyo, Japan⁴, Division of Endocrinology and Metabolism, Saitama Children's Medical Center, Saitama, Japan⁵)
- O-043 Effect of cinacalcet on bone metabolism disorders in patients with hypophosphatemic rickets/osteomalacia**
 Noriyuki Hayashi, Yasuo Imanishi, Daichi Miyaoka, Masaya Ohara, Yuuki Nagata, Shinsuke Yamada, Masaaki Inaba
 (Department of Metabolism, Endocrinology and Molecular Medicine, Osaka City University Graduate School of Medicine, Osaka, Japan)
- O-044 Incidence rate of symptomatic vitamin D deficiency in children: a nationwide survey in Japan**
 Takuo Kubota¹, Hirofumi Nakayama¹, Sachiko Kitanaka², Toshimi Michigami³, Ikuma Fujiwara⁴, Seiji Fukumoto⁵, Kosei Hasegawa⁶, Yuko Sakamoto⁷, Keiichi Ozono¹
 (Department of Pediatrics, Osaka University Graduate School of Medicine, Suita, Japan¹, Department of Pediatrics, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan², Department of Bone and Mineral Research, Research Institute, Osaka Women's and Children's Hospital, Osaka Prefectural Hospital Organization, Izumi, Japan³, Department of Pediatric Endocrinology and Environmental Medicine, Tohoku University Graduate School of Medicine, Sendai, Japan⁴, Institute of Advanced Medical Sciences, Tokushima University, Tokushima, Japan⁵, Department of Pediatrics, Okayama university hospital, Okayama, Japan⁶, Department of Orthopedics, Juntendo Nerima Hospital, Tokyo, Japan⁷)
- O-045 Evaluation of the change in bone turnover through stable isotope signatures of Calcium in serum**
 Yu-ki Tanaka^{1,2}, Hideyuki Yamato³, Takafumi Hirata⁴
 (Graduate School of Science, Kyoto University, Tokyo, Japan¹, Kureha Special Laboratory Co., Ltd², Kureha Co., Ltd³, Geochemistry Research Center, The Univ. Tokyo⁴)
- O-046 Ectopic expression of Klotho in the causative tumors of tumor-induced osteomalacia**
 Yuka Kinoshita¹, Yuichi Takashi¹, Nobuaki Ito¹, Shiro Ikegawa², Seiji Fukumoto³
 (Division of Nephrology & Endocrinology, Department of Medicine, the University of Tokyo Hospital, Tokyo, Japan¹, Laboratory for Bone and Joint Diseases, Center for Integrative Medical Sciences, RIKEN (The institute of Physical and Chemical Researches), Tokyo, JAPAN², Fujii Memorial Institute of Medical Sciences, Tokushima University, Tokushima, Japan³)
- O-047 Development of FGF23-Phosphor Integrated Dot nanoparticles (PID) for the differential diagnosis of FGF23-related hypophosphatemia**
 Nobuaki Ito¹, Minae Koga¹, Yuka Kinoshita¹, Tetsuo Ushiku²
 (Department of Endocrinology & Nephrology, University of Tokyo Hospital, Tokyo, Japan¹, Department of Pathology, University of Tokyo Hospital, Tokyo, Japan²)

Chairs: Taku Saito (Orthopaedic Surgery, Graduate School of Medicine, The University of Tokyo)

Masato Sato (Department of Orthopaedic Surgery, Tokai University School of Medicine)

- O-048 Osteogenic role of a long non-coding RNA that is involved in chondrocytic differentiation**
Takanori Ishikawa¹, Yurika Murase^{1,2}, Takashi Nishida¹, Takako Hattori¹, Mitsuaki Ono³, Hiroshi Kamioka⁴, Masaharu Takigawa^{1,2}, Satoshi Kubota^{1,2}
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- O-049 RANKL-binding peptide W9 stimulates chondrocyte differentiation not via RANKL reverse signaling but via p38 and smad1/5/8 phosphorylation**
Yuriko Furuya¹, Wataru Mera², Shigeyuki Wakitani³, Hisataka Yasuda¹
(Nagahama Institute for Biochemical Science Oriental Yeast Co., Ltd.¹, Uonuma Kikan Hospital², Mukogawa Women's University, Department of Health and Sports Sciences³)
- O-050 Effect of LIPUS on *CCN2* and *CCN3* expression in meniscus cells in culture and meniscus tissues *in vivo***
Yusuke Kamatsuki¹, Eriko Aoyama², Takayuki Furumatsu¹, Ami Machara¹, Nobuyasu Yamanaka³, Takashi Nishida⁴, Satoshi Kubota^{2,4}, Toshifumi Ozaki¹, Masaharu Takigawa²
(Okayama University Graduate School Department of Orthopaedic Surgery, Okayama, Japan¹, Okayama University Dental School Advanced Research Center for Oral and Craniofacial Sciences², ITO cooperation, Ltd³, Okayama University Graduate School Department of Biochemistry and Molecular Dentistry⁴)
- O-051 Differential regulatory mechanism of *CCN2* production by serotonin (5-HT) between articular and growth plate chondrocytes**
Ayaka Hori^{1,2}, Takashi Nishida^{1,2}, Shogo Takashiba², Satoshi Kubota^{1,3}, Masaharu Takigawa^{1,3}
(Department of Biochemistry and Molecular Dentistry, University of Okayama, Okayama, Japan¹, Department of Pathophysiol-Periodont Science, University of Okayama, Okayama, Japan², Advanced research center for oral and craniofacial sciences, University of Okayama, Okayama, Japan³)
- O-052 Effect of *VASH1* on endochondral ossification regulated by *CCN2***
Yurika Murase^{1,2,3}, Eriko Aoyama³, Satoshi Kubota^{1,3}, Akira Sasaki², Masaharu Takigawa¹
(Adv. Res. Ctr. Oral Craniofac. Sci., Okayama Univ. Dent. Sch.¹, Dept. Oral and Maxillofac. Surg., Okayama Univ. Grad. Sch. Med. Dent. Pharm. Sci.², Dept. Biochem. and Mol. Dent., Okayama Univ. Grad. Sch. Med. Dent. Pharm. Sci.³)
- O-053 Catabolic effects of *FGF-1* on chondrocytes with reduced *CCN2* production that promotes cartilage regeneration: Possible role in Osteoarthritis**
Abdellatif Elseoudi¹, Tarek Abd El Kader^{1,2}, Takashi Nishida¹, Eriko Aoyama², Takanori Eguchi³, Masaharu Takigawa², Satoshi Kubota^{1,2}
(Department of Biochemistry and Molecular Dentistry, Okayama University, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences¹, Department of Advanced Research Center for Oral and Craniofacial Sciences, Okayama University, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences², Department of Dental Pharmacology, Okayama University, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences³)

Chairs: Yoshiko Iwasaki (Oita University of Nursing and Health Sciences)
Tomoki Okazaki (Department of Biochemistry, Teikyo University School of Medicine)

- O-054 Role of type III Na⁺/Pi co-transporters in the responsiveness to extracellular inorganic phosphate in osteoblasts: analysis using Pit2-knockout cells**
Miwa Yamazaki¹, Masanobu Kawai¹, Keiichi Ozono², Toshimi Michigami¹
(Department of Bone and Mineral Research, Research Institute, Osaka Prefectural Hospital Organization, Osaka Women's and Children's Hospital, Izumi, Japan¹, Department of Pediatrics, Osaka University Graduate School of Medicine, Suita, Japan²)
- O-055 Risedronate could reduce the glomerular basement membrane thickening in Pit-1 overexpressing transgenic rat**
Takeshi Takayanagi, Yasumasa Yoshino, Sahoko Ueda, Megumi Shibata, Atsushi Suzuki
(Division of Endocrinology and Metabolism, Department of Internal Medicine, Fujita Health University, Aichi, Japan)
- O-056 Ultrastructural assessment for inhibitory mechanism on matrix vesicle-mediated mineralization of *kl/kl* mice**
Tomoka Hasegawa¹, Tomomaya Yamamoto^{1,2}, Norio Amizuka¹
(Department of Developmental Biology of Hard Tissue, Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan.¹, SDF Hanshin Hospital, Kawanishi, Japan²)
- O-057 Vitamin D contents of breast milk from Japanese women - an adjunct study of JECS -**
Mikiko Suzuki¹, Masashi Nagata¹, Ikuma Fujiwara²
(Food Science Research Labs, Meiji Co., Ltd, Kanagawa, Japan¹, Department of Pediatric Endocrinology and Environmental Medicine, Tohoku University Graduate School of Medicine²)
- O-058 The investigation of serum 25(OH)D in patients with atypical femoral fracture**
Hiroyuki Tsuchie¹, Naohisa Miyakoshi¹, Yuji Kasukawa¹, Toyohito Segawa², Yoichi Shimada¹
(Department of Orthopedic Surgery, Akita University Graduate School of Medicine, Akita, Japan¹, Department of Orthopedic Surgery, Ugo Municipal Hospital, Ugo, Japan²)
- O-059 Free Vitamin D in Bone Mineral Research - A Review of Evidence**
Nicolas Heureux
(DIAsource Immunoassays)

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

Hiroshi Asahara (Department of Systems Bio Medicine, Graduate School and Faculty of Medicine, Tokyo Medical and Dental University)

- O-060 The role of Scleraxis in the formation of tendons and ligaments integrating the musculoskeletal system**
 Yuki Yoshimoto¹, Aki Takimoto², Yuji Hiraki², Chisa Shukunami¹
 (Department of Molecular Biology and Biochemistry Basic Life Sciences, Hiroshima University, Hiroshima, Japan¹, Cellular Differentiation, Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan²)
- O-061 Inhibitory regulation of fibrocartilage differentiation by Annexin A5 at tendon/ligament insertion sites**
 Akemi Shimada¹, Yoshinori Arai², Koichiro Komatsu¹, Satoshi Wada³, Hisashi Ideno¹, Kazuhisa Nakashima¹, Teruhito Yamashita⁴, Yoichi Ezura⁵, Norio Amizuka⁶, Yoshiki Nakamura³, Akira Nifuji¹
 (Department of Pharmacology, School of Dental Medicine, Tsurumi University, Kanagawa, Japan¹, Nihon Univ. Sch. of Dent.², Dep. of Orthod., Sch. of Dent. Med., Tsurumi Univ.³, Div. of Hard Tissue Res., Inst. for Oral Sci. Matsumoto Dent. Univ.⁴, Mol. Pharmacol., Adv. Mol. Med., Med. Res. Inst., Tokyo Med. Dent. Univ.⁵, Dep. of Dev. Biol. of Hard Tissue, Grad. Sch. of Dent. Med., Hokkaido Univ.⁶)
- O-062 Nerves in the proximal tibial epiphysis pass along posterior cruciate ligament**
 Ayako Miya¹, Shinsuke Shibata², Masaki Yoda¹, Yukiko Kuroda¹, Tomoya Tanaka³, Ryoko Takao³, Koichi Matsuo¹
 (Laboratory of Cell and Tissue Biology, Keio University School of Medicine¹, Department of Physiology, Keio University School of Medicine², Laboratory for Pharmacology, Musculoskeletal Disorders, Pharmaceuticals Research Center, AsahiKASEI Pharma corporation³)
- O-063 Role of plasminogen activator inhibitor-1 in glucocorticoid-induced muscle wasting**
 Yuki Tamura^{1,2}, Naoyuki Kawao¹, Takeshi Shimoide¹, Kiyotaka Okada¹, Osamu Matsuo³, Hiroshi Kaji¹
 (Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine, Osakasayama, Japan¹, Division of Physiology and Biochemistry, Kobe Gakuin University Faculty of Nutrition, Kobe, Japan², Kindai University Faculty of Medicine, Osakasayama, Japan³)
- O-064 Roles of R-spondin2; the susceptibility gene for ossification of posterior longitudinal ligament**
 Kazuhito Soma¹, Yuki Taniguchi¹, Takeshi Oichi¹, Manabu Kawata¹, Sakae Tanaka¹, Fumiko Yano², Taku Saito^{1,2}
 (Sensory & Motor System Medicine, Faculty of Medicine, The University of Tokyo, Tokyo, Japan¹, Bone and Cartilage Regenerative Medicine, Faculty of Medicine, The University of Tokyo, Tokyo, Japan²)
- O-065 TLE3 regulates myogenic differentiation of satellite cells**
 Shoichiro Kokabu, Chihiro Nakatomi, Takuma Matsubara, Eijiro Jimi
 (Division of Molecular Signalin and Biochemistry, Department of Health Promotion, Kyushu Dental University)
- O-066 High Prevalence of Sarcopenia Among Binge Drinking Elderly Women: A Nationwide Population-Based Study**
 Yong-Chan Ha¹, Jun-Il Yoo², Myung Hoon Hahn³
 (Department of Orthopaedic Surgery, Chung-Ang University College of Medicine, Seoul, Korea¹, Department of Orthopaedic Surgery Gyeongsang National University Hospital, Jinju, Korea², Department of Orthopaedic Surgery, Cheil General Hospital and Women's Healthcare Center, Dankook University College of Medicine, Cheonan, Korea³)

Chairs: Takashi Yamashiro (Department of Orthodontics, Osaka University Graduate School of Dentistry)

Teruko Takano-Yamamoto (Division of Orthodontics and Dentofacial Orthopedics Tohoku University Graduate School of Dentistry)

- O-067 Orthodontic tooth movement contrastingly regulates SOST/Sclerostin expression in alveolar bone**
 Naoya Odagaki¹, Yoshihito Ishihara², Ziyi Wang¹, Masahiro Nakamura², Ei EI HSU HLAING¹, Hiroshi Kamioka¹
 (Department of Orthodontics, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama, Japan¹, Department of Orthodontics, Okayama University Hospital, Okayama, Japan²)
- O-068 TRPM7 regulates enamel development via its kinase domain**
 Masashi Shin¹, Kayoko Ogata^{1,2}, Kyoko Oka², Fujio Okamoto¹, Hiroshi Kajiya¹, Koji Okabe¹
 (Cellular Physiology, Fukuoka Dental College, Fukuoka, Japan¹, Pediatric Dentistry, Fukuoka Dental College, Fukuoka, Japan²)
- O-069 H3K9MTase G9a regulates cell proliferation and differentiation of tooth germ during mouse development**
 Hisashi Ideno¹, Taichi Kamiunten², Akemi Shimada¹, Tatsuo Terashima³, Kazuhisas Nakashima¹, Yasuhiro Tomooka⁴, Yoshiki Nakamura², Hiroshi Kimura⁵, Makoto Tachibana⁶, Akira Nifuji¹
 (Department of Pharmacology, Tsurumi University School of Dental Medicine¹, Department of Orthodontics, Tsurumi University School of Dental Medicine², Department of Biochemistry and Molecular Biology, Tsurumi University School of Dental Medicine³, Biological Science & Technology, The Tokyo University of Science⁴, School of Life Science and Technology, Tokyo Institute of Technology⁵, Institute for Enzyme Research, The University of Tokushima⁶)
- O-070 Effects of Anti-bone-resorptive Drugs on the Growth and Tooth Development of Young Mice**
 Motoki Isawa^{1,2}, Akiko Karakawa¹, Nobuhiro Sakai¹, Takako Negishi¹, Masahiro Chatani¹, Masamichi Takami¹
 (Department of Pharmacology, School of Dentistry, Showa University, Tokyo, Japan¹, Department of Pediatric Dentistry, School of Dentistry, Showa University, Tokyo, Japan²)
- O-071 Alveolar bone regeneration and morphological changes by gene transfer to the periodontal tissue with non-viral vector and electroporation**
 Mariko Kawai, Kiyoshi Ohura
 (Department of Phalmacology, Faculty of Dentistry, Osaka Dental University)
- O-072 The restorative effects of W9 peptide on alveolar bone loss in OPG-deficient mice**
 Yuki Ozaki¹, Masanori Koide², Yuriko Furuya³, Tadashi Ninomiya², Hisataka Yasuda³, Midori Nakamura⁴, Nobuo Yoshinari¹, Naoyuki Takahashi², Nobuyuki Udagawa^{2,4}
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Chairs: Atsushi Kawakami (Division of Advanced Preventive Medical Sciences, Nagasaki University Graduate School of Biomedical Sciences)

Yasuharu Nakashima (Department of Orthopaedic Surgery, Kyushu University)

- O-073 Beta-catenin signaling contributes to maintenance of superficial zone of articular cartilage**
Feng-Jun Xuan¹, Fumiko Yano^{1,2}, Yuma Makii¹, Yoshifumi Mori¹, Manabu Kawata¹, Sakae Tanaka¹, Taku Saito¹
(Department of Orthopaedic Surgery, Faculty of Medicine, University of Tokyo, Tokyo, Japan¹, Bone and Cartilage Regenerative medicine, Faculty of Medicine, University of Tokyo, Tokyo²)
- O-074 DNA demethylation enzyme TET3 exacerbates bone destruction in rheumatoid arthritis**
Akio Kawabe¹, Kazuhisa Nakano¹, Kaou Yamagata¹, Kei Sakata^{1,2}, Shingo Nakayamada¹, Yoshiya Tanaka¹
(University of Occupational and Environmental Health, Japan, Kitakyushu, Japan¹, Mitsubishi Tanabe Pharma Corporation, Yokohama, Japan²)
- O-075 Th22 cells accumulate into synovial tissues in patients with RA and induce osteoclast differentiation through production of IL-22**
Yusuke Miyazaki, Shingo Nakayamada, Satoshi Kubo, Kaoru Yamagata, Kazuhisa Nakano, Shigeru Iwata, Ippei Miyagawa, Maiko Yoshikawa, Kazuyoshi Saito, Yoshiya Tanaka
(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan)
- O-076 Human dendritic cell-derived osteoclasts exacerbate the inflammatory osteoclastogenesis of rheumatoid arthritis with the ability for both bone absorption and T cell stimulation**
Manabu Narisawa¹, Satoshi Kubo¹, Shingo Nakayamada¹, Kei Sakata¹, Yosuke Okada¹, Kunihiro Yamaoka², Yoshiya Tanaka¹
(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan, Fukuoka, Japan¹, Division of Rheumatology Department of Internal Medicine Keio University of School Medicine²)
- O-077 Elevated concentration of soluble TCTA protein-derived products in peripheral blood of untreated patients with early-onset rheumatoid arthritis**
Shigeru Kotake, Yuki Nanke, Toru Yago, Manabu kawamoto, Tsuyoshi Kobashigawa, Hisashi Yamanaka
(Institute of Rheumatology, Tokyo Women's Medical University)
- O-078 Comparison of locomotive syndrome risk test and serum 25-hydroxvitamin D between the patients with distal radius fracture and rheumatoid arthritis**
Hayato Kinoshita¹, Naohisa Miyakoshi², Yuji Kasukawa², Hidekazu Abe¹, Toyohito Segawa¹, Youichi Shimada²
(Department of Orthopedics, Ugo Municipal Hospital, Akita, Japan¹, Akita University Graduate School of Medicine, Department of Orthopedic Surgery, Akita, Japan²)

Chairs: Norio Amizuka (Department of Developmental Biology of Hard Tissue, Graduate School of Dental Medicine, Hokkaido University)

Takenobu Katagiri (Division of Pathophysiology, Research Center for Genomic Medicine, Saitama Medical University)

- O-079 Osteoclast-derived LIF suppresses sclerostin expression in osteocytes and promotes bone formation**
 Masanori Koide¹, Yasuhiro Kobayashi¹, Teruhito Yamashita¹, Shunsuke Uehara², Yuki Ozaki¹, Tadahiro Iimura³, Midori Nakamura², Hisataka Yasuda⁴, Naoyuki Takahashi¹, Nobuyuki Udagawa²
 (Institute for Oral Science, Matsumoto Dental University, Nagano, Japan¹, Department of Biochemistry, Matsumoto Dental University, Nagano, Japan², Proteo-Science Center (PROS) and Advanced Research Support Center (ADRES), Ehime University, Ehime, Japan³, Nagahama Institute for Biochemical Science, Oriental Yeast Co., Ltd., Shiga, Japan⁴)
- O-080 Genetic lineage tracing analysis of Hedgehog-signal-responsive cells in long bone elongation**
 Ryuma Haraguchi¹, Riko Kitazawa^{1,2}, Yuuki Imai³, Sohei Kitazawa¹
 (Dept. Mol. Pathol., Ehime Univ, Ehime, Japan¹, Dept. Diagn. Pathol., Ehime Univ. Hosp, Ehime, Japan², PROS, Ehime Univ, Ehime, Japan³)
- O-081 Single cell RNA-sequencing shows transcriptional heterogeneity in osteoblasts and their transdifferentiation potential into adipocytes**
 Saki Okita^{1,2}, Hiroataka Yoshioka¹, Tomoko Minamizaki¹, Yuji Yoshiko¹
 (Department of Calcified Tissue Biology, Hiroshima University Institute of Biomedical & Health Sciences, Hiroshima, Japan¹, Department of Orthodontics and Craniofacial Developmental Biology, Hiroshima University Institute of Biomedical & Health Sciences, Hiroshima, Japan²)
- O-082 The periosteum-derived hormone Osteocrin regulates long bone growth**
 Takano Haruko¹, Ayano Chiba¹, Takahiro Miyazaki¹, Yugo Kanai³, Keita Mori², Akihiro Yasoda³, Hideki Yokoi², Naoki Mochizuki¹
 (Dept. of Cell Biol., Natl. Cereb. And Cardiovasc. Ctr. Res. Inst.¹, Dept. of Nephrol, Grad. Sch. Of Mes., Kyoto Univ.², Dept. of Diab, Endocrinol. and Nut., Grad. Sch. Of Mes., Kyoto Univ.³)
- O-083 Histochemical assessment on bone in transgenic mice overexpressing parathyroid hormone-related peptide (PTHrP) driven by type1 collagen promoter**
 Tomomaya Yamamoto^{1,2}, Tomoka Hasegawa¹, Norio Amizuka¹
 (Department of Developmental Biology of Hard Tissue, Graduate School of Dent al Medecine Hokkaido University, Sapporo, Japan¹, JSDF Hanshin Hospital, Kawanishi, Japan²)
- O-084 Col1a1^{low} osteoblasts are a novel osteoblast subpopulation depositing bone matrix during endochondral ossification**
 Yukiko Kuroda, Masaki Yoda, Koichi Matsuo
 (Laboratory of Cell and Tissue Biology, Keio University School of Medicine, Tokyo, Japan)

Chairs: Hisaaki Miyahara (NHO Kyushu Medical Center)
Shingo Nakayamada (The First Department of Internal Medicine,
University of Occupational and Environmental
Health)

- O-085 Assessment of the effects of switching oral bisphosphonates to denosumab or daily teriparatide in patients with rheumatoid arthritis**
Ebina Kosuke¹, Makoto Hirao¹, Jun Hashimoto², Masafumi Kashii³, Takaaki Noguchi⁴, Kazuma Kitaguchi¹, Hideki Yoshikawa¹
(Department of Orthopedic Surgery, Osaka University, Graduate School of Medicine, Osaka, Japan¹, Department of Rheumatology, National Hospital Organization, Osaka Minami Medical Center, Osaka, Japan², Department of Orthopaedic Surgery, Toyonaka Municipal Hospital, Toyonaka, Osaka, Japan³, Department of Orthopaedic Surgery, National Hospital Organization, Osaka Minami Medical Center, Osaka, Japan⁴)
- O-086 The effect of biologics on bone metabolism in patients with rheumatoid arthritis**
Satoshi Kubo, Shingo Nakayamada, Kazuhisa Nakano, Yosuke Okada, Kazuyoshi Saito, Yoshiya Tanaka
(The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Kitakyushu, Japan)
- O-087 Comparison of efficacy of TNF-inhibitor adalimumab and JAK-inhibitor tofacitinib on bone metabolism in patients with rheumatoid arthritis**
Kazuhisa Nakano, Kazuyoshi Saito, Shingo Nakayamada, Shigeru Iwata, Satoshi Kubo, Ipppei Miyagawa, Yosuke Okada, Yoshiya Tanaka
(The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan)
- O-088 Therapeutic Treatment of Anti-Fractalkine Monoclonal Antibody Inhibits Bone and Cartilage Destruction in Collagen-Induced Arthritis Model in Mice**
Naoto Ishii¹, Kana Negishi¹, Tomoya Nakatani¹, Masayoshi Ohkuro², Wataru Ikeda¹, Yoshikazu Kuboi¹, Toshihiko Yamauchi¹, Nobuyuki Yasuda¹, Toshio Imai¹
(KAN Research Institute, Inc., Hyogo, Japan¹, EA Pharma Co., Ltd., Kanagawa, Japan²)
- O-089 Bone quality abnormalities in femur of mouse model of rheumatoid arthritis were obtained from FTIR imaging analysis of fresh bone without PMMA embedding**
Teppei Ito¹, Masahiko Takahata², Tomohiro Shimizu², Kyousuke Kanazawa¹, Hiromi Kimura-Suda¹
(Graduate school of Photonics Science, Chitose Institute of Science and Technology, Hokkaido, Japan¹, Hokkaido University, Department of Orthopedic Surgery, School of Medicine, Hokkaido, Japan²)
- O-090 Platelet rich plasma with Chinese medicine in hyaluronic acid gel for articular cartilage retrieval and immunoregulatory effect on osteoarthritis**
Zhe Cai¹, william weijia Lu^{1,2}, Chun-Hoi Yan¹, Peter Kwong-Yuen Chiu¹
(Department of Orthopaedics & Traumatology, The University of Hong Kong, HK¹, Shenzhen Institutes of Advanced Technology, Chinese Academy of Science, Shenzhen, China²)

Chairs: Tadahiro Iimura (Ehime University)
Shinsuke Ohba (Center for Disease Biology and Integrative Medicine, The
University of Tokyo Graduate School of Medicine)

- O-091 Fate of ectopically formed trabecular bone in the bone marrow cavity by the intermittent administration of parathyroid hormone**
Yoko Miyazaki¹, Tsukasa Yanagi¹, Junro Yamashita²
(Fukuoka Dental College, Department of Oral Rehabilitation, Oral Implantology¹, Fukuoka Dental College Department of Oral Rehabilitation, Advanced comprehensive Dentistry²)
- O-092 Romosozumab Blocks the Binding of Sclerostin to the Two Key Wnt Signaling Co-receptors, LRP5 and LRP6, but not to LRP4**
Chris Paszty, Jianhua Gong, Jin Cao, Joanne Ho, Ching Chen
(Amgen Inc.)

- O-093 Noncoding RNA regulatory mechanism of osteoblast differentiation**
Hiroyuki Inose, Akira Takahashi
(Department of Orthopedics, Graduate School, Tokyo Medical and Dental University, Tokyo, Japan)
- O-094 Mechanism of vascular calcification induced by IL-6 ~involvement of histone demethylation at RUNX2 promoter~**
Akira Kurozumi, Kazuhisa Nakano, Kaoru Yamagata, Yosuke Okada, Shingo Nakayamada, Yoshiya Tanaka
(University of Occupational and Environmental Health, Kitakyushu, Japan)
- O-095 Establishment of a new mouse model of injury-induced heterotopic ossification**
Wenqiang Yin¹, Kazuo Okamoto², Asuka Terashima², Takehito Ono³, Hiroshi Takayanagi¹
(Department of Immunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan¹, Department of Osteoimmunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan², Department of Cell Signaling, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo, Japan³)
- O-096 Impaired fracture healing in TRPV4 deleted mice**
Yuji Oki¹, Mizuho Kido²
(Faculty of Fukuoka Medical Technology, Teikyo University, Fukuoka, Japan¹, Department of Anatomy and Physiology, Faculty of Medicine, Saga University, Saga, Japan²)

Oral 17 Rheumatoid arthritis/Osteoarthritis 3 10:40-11:40 Room 3 / SHIKA 1 (5F)

Chairs: Shigeru Kotake (Institute of Rheumatology, Tokyo Women's Medical University)

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

- O-097 Differentiation of dendritic cell-derived osteoclast-like cells in collagen-induced arthritis mice and the effect of inflammatory cytokines**
Yuichiro Ota, Kunihiro Yamaoka, Yumi Ikeda, Keiko Yoshimoto, Tsutomu Takeuchi
(Division of Rheumatology, Department of Internal Medicine, Keio University School of Medicine, Tokyo, Japan)
- O-098 Serum tartrate-resistant acid phosphatase 5b (TRACP-5b) levels as a risk factor for the radiographic knee joint space narrowing in men in late middle age without knee pain - A three-year prospective observational study**
Lizu Liu^{1,2}, Muneaki Ishijima^{1,2}, haruka Kaneko¹, Mayuko Kinoshita¹, Jun Shiozawa¹, Hitoshi Arita¹, Takako Aoki², Yoshifumi Tamura^{2,3}, Hirotaka Watada^{2,3}, Ryuzo Kawamori^{2,3}, Yuji Takazawa¹, Hiroshi Ikeda¹, Kazuo Kaneko^{1,2}
(Department of Medicine for Orthopaedics and Motor Organ, Juntendo University Graduate School of Medicine, Tokyo, Japan¹, Sportology Center, Juntendo University Graduate School of Medicine, Tokyo, Japan², Department of Metabolism and Endocrinology, Juntendo University Graduate School of Medicine, Tokyo, Japan³)
- O-099 Effects of eldelcalcitol and ibandronate on bone mineral density and arthritis in rats with adjuvant-induced arthritis**
Yuichi Ono, Naohisa Miyakoshi, Yuji Kasukawa, Manabu Akagawa, Masazumi Suzuki, Tetsuya Kawano, Itsuki Nagahata, Yusuke Yuasa, Yoichi Shimada
(Department of Orthopedic Surgery, Akita University Graduate School of Medicine, Akita, Japan)
- O-100 Angiotensin II exacerbates inflammatory bone destruction in TNF-mediated arthritis mice**
Takafumi Mito, Tomoyuki Mukai, Shunichi Fujita, Shoko Kodama, Akiko Nagasu, Yoshitaka Morita
(The Department of Rheumatology, Kawasaki Medical University, Okayama, Japan)
- O-101 Analysis of bone turnover marker of rheumatoid arthritis patients untreated with osteoporosis**
Noriaki Okumura, Taku Kawsaki, Kosuke Kumagai, Ryouzou Kogawa, Hitoshi Tanigawa, Shinji Imai
(Department of Orthopaedic Surgery, Shiga University of Medical Science, Shiga, Japan)
- O-102 Study of P1NP in patients treated with denosumab**
Yuichiro Tamagawa, Hitoshi Tanigawa
(Kusatsu General Hospital)

Chairs: Hironori Hojo (Department of Bioengineering, The University of Tokyo Graduate School of Engineering)
Toru Fukuda (Tokyo Seiei College)

- O-103 Drug discovery for osteogenesis imperfecta using patient-specific induced pluripotent stem cells and fibroblasts**
Shinji Takeyari, Makoto Fujiwara, Takuo Kubota, Keiichi Ozono
(Department of Pediatrics, Osaka University Graduate School of Medicine, Osaka, Japan)
- O-104 Anomaly of osteoblast differentiation ability and its molecular mechanism of iPS cells derived from Gorlin syndrome patient**
Shoko Onodera^{1,2}, Toshifumi Azuma¹, Akiko Saito¹, Daigo Hasegawa³, Akira Katakura⁴, Takashi Nomura⁵, Kenjiro Kosaki⁶, Chung Ung-il², Shinsuke Ohba²
(Department of Biochemistry, Tokyo Dental Collage, Tokyo Japan¹, Division of Clinical Biotechnology, The University of Tokyo Graduate School of Medicine, Tokyo, Japan², Department of oral and oral and maxillofacial surgery, Tokyo Dental collage, Tokyo Japan³, Department of Oral Pathobiological Science and Surgery, Tokyo Dental collage, Tokyo, Japan⁴, Department of oral medicine, oral and maxillofacial surgery, Tokyo Dental collage, Tokyo, Japan⁵, Center for Medical Genetics, Keio University School of Medicine, Tokyo, Japan⁶)
- O-105 Abnormal cell nuclear morphology of osteoblasts derived from cleidocranial dysplasia patient-specific iPS cells**
Akiko Saito¹, Akio Ooki², Takashi Sawada³, Takashi Nakamura¹, Shoko Onodera¹, Daigo Hasegawa⁴, Kenjiro Kosaki⁵, Takeshi Onda⁴, Akira Watanabe⁴, Takahiko Shibahara⁴, Kenji Sueishi², Toshifumi Azuma¹
(Department of Biochemistry, Tokyo Dental College, Tokyo, Japan¹, Department of Orthodontics, Tokyo Dental College, Tokyo, Japan², Department of Histology and Developmental Biology, Tokyo Dental College, Tokyo, Japan³, Department of Oral and Maxillofacial Surgery, Tokyo Dental College, Tokyo, Japan⁴, Center for Medical Genetics, Keio University School of Medicine, Tokyo, Japan⁵)
- O-106 Effects of a self-assembling peptide as scaffold on bone healing**
Kei Ando, Shiro Imagama, Kazuyoshi Kobayashi, Kenyu Ito, Mikito Tsushima, Masaaki Machino, Kyotaro Ohta, Satoshi Tanaka, Masayoshi Morozumi, Sadayuki Ito, Shunsuke Kanbara, Yoshihiro Nishida, Naoki Ishiguro
(Dept. of Orthop. Surg., Graduate School of Medicine, Nagoya Univ.)
- O-107 The primary trabecular bone become lamellar bone under continuous injection of PTH**
Nobuhito Nango¹, Shogo Kubota¹, Yusuke Horiguchi¹, Hidekazu Takano², Wataru Yashiro², Atsushi Momose², Shizuko Ichinose³, Koichi Matsuo⁴
(Ratoc System Engineering Co., LTD., Tokyo, Japan¹, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan², Research Center for Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo, Japan³, Laboratory of Cell and Tissue Biology, Keio University School of Medicine, Tokyo, Japan⁴)
- O-108 Effects of Romosozumab on Remodeling and Bone Strength at the Distal Radius in Ovariectomized Cynomolgus Monkeys**
Chris Paszty¹, Michael Ominsky¹, Steven Boyd², Aureo Varela³, Jacquelin Jolette³, Nancy Doyle³, Susan Smith³, Kathrin Locher¹, Sabina Buntich¹, Rogely Boyce¹
(Amgen Inc.¹, University of Calgary², Charles River Laboratories Preclinical Services³)

Chairs: Jun Hashimoto (National Hospital Organization, Osaka Minami Medical Center)

Hiroshi Kaji (Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine)

- O-109 Prevalence of acetabular dysplasia and its association with hip pain in Japanese men and women: The ROAD study**
Toshiko Iidaka¹, Shigeyuki Muraki¹, Hiroyuki Oka², Rie Kodama³, Sakae Tanaka³, Hiroshi Kawaguchi⁴, Kozo Nakamura⁵, Toru Akune⁵, Noriko Yoshimura¹
(Department of Preventive Medicine for Locomotive Organ Disorders, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo, Tokyo, Japan¹, Department of Medical Research and Management for Musculoskeletal Pain, 22nd Century Medical & Research Center, Faculty of Medicine, University of Tokyo, Tokyo, Japan², Department of Orthopaedic Surgery, Faculty of Medicine, the University of Tokyo, Tokyo, Japan³, Department of Orthopaedic Surgery, Japan Community Health Care Organization Tokyo Shinjuku Medical Center, Tokyo, Japan⁴, National Rehabilitation Center for Persons with Disabilities, Saitama, Japan⁵)
- O-110 SIRT7 regulates chondrocyte differentiation and plays an important role for the onset of osteoarthritis**
Wataru Korogi, Tatsuya Yoshizawa, Kazuya Yamagata
(Department of Medical Biochemistry Faculty of Life Sciences Kumamoto University, Kumamoto, Japan)
- O-111 Augmented Asporin expression is observed prior to the articular destruction in the osteoarthritic mice**
Yutaka Miyamoto¹, Hiroyuki Kanzaki¹, Satoshi Wada¹, Kanako Itohiya¹, Sari Tsuruoka¹, Yuki Yamaguchi¹, Yuta Katsumata¹, Kenichi Kumagai², Yoshiki Hamada², Yoshiki Nakamura¹
(Department of Orthodontics, School of Dental Medicine, Tsurumi University¹, Department of Oral and Maxillofacial Surgery, School of Dental Medicine, Tsurumi University²)
- O-112 Transcription factor HIF-2a is expressed in superficial zone of articular cartilage, and contributes to joint homeostasis**
Yuma Makii¹, Fumiko Yano², Keita Okada¹, Yoshifumi Mori¹, Manabu Kawata¹, Sakae Tanaka¹, Taku Saito¹
(Department of Orthopaedics Surgery, Graduate School of Medecine, The University of Tokyo, Tokyo, Japan¹, Bone and cartilage regenerative medicine, Fucultery of Medicine, The University of Tokyo, Tokyo, Japan²)
- O-113 Tumor necrosis factor receptor-associated factor 6 is required to inhibit foreign body giant cell formation and activate osteoclasts under inflammatory and infectious conditions**
Akihito Oya¹, Eri Katsuyama¹, Mayu Morita², Takatsugu Oike¹, Satoshi Nakamura¹, Ryuichi Watanabe¹, Arihiko Kanaji¹, Morio Matsumoto¹, Takeshi Miyamoto¹, Masaya Nakamura¹
(Department of Orthopedic Surgery, Keio University School of Medicine, Tokyo, Japan¹, Department of Dentistry and Oral Surgery, Keio University School of Medicine, Tokyo, Japan²)
- O-114 A Case of diffuse sclerosing osteomyelitis of the mandible was treated successfully with anti-resorptive agents**
Ushaku Lee¹, Yasushi Ohmi¹, Naritaka Mizutani^{1,3}, Naotoshi Miya¹, Shinji Maruyama^{1,2}, Yuuichi Sasakura^{1,4}
(The Department of Dentistry and Oral Surgery, Yokosuka Kyosai Hospital, Kanagawa Japan¹, Japan Defense Forces Hospital Yokosuka Kanagawa Japan², Mizutani Dental Clinic Kanagawa Japan³, Koyama Memorial Hospital Dentistry and Oral Surgery Ibaraki Japan⁴)

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

Tsuyoshi Shimo (Department of Oral and Maxillofacial Surgery, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences)

- O-115 Reshaping of the mouse fibula after endochondral ossification**
Masaki Yoda, Yukiko Kuroda, Koichi Matsuo
(Laboratory of Cell and Tissue Biology, Keio University School of Medicine, Tokyo, Japan)
- O-116 Cdk1 is essential for bone formation and fracture repair**
Akira Takahashi, hiroyuki Inose
(The Department of Orthopedic surgery, Tokyo Medical and Dental university, Tokyo, Japan)
- O-117 Growth of mouse cranial base bones in response to brain enlargement**
Mio Edamoto, Yukiko Kuroda, Masaki Yoda, Koichi Matsuo
(Laboratory of Cell and Tissue Biology, Keio University School of Medicine, Tokyo, Japan)
- O-118 Connexin43 hemichannel regulates mechanical stress-driven intracellular calcium response of osteocytes in bone**
Yoshihito Ishihara¹, Naoya Odagaki², Ei Ei Hsu Hlaing², Ziyi Wang², Hiroshi Kamioka²
(Department of Orthodontics, Okayama University Hospital, Okayama, Japan¹, :Department of Orthodontics, Graduate School of Medicine, Dentistry and Pharm aceutical Sciences, Okayama University, Okayama, Japan²)
- O-119 The effect of ROCK inhibitor on bone metabolism**
Juri Nakata^{1,2}, Yosuke Akiba³, Kaori Eguchi³, Jun Nihara², Isao Saito², Yoshito Kakihara¹, Makio Saeki¹
(Division of Dental Pharmacology, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan¹, Division of Orthodontics, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan², Division of Bio-Prosthodontics, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan³)

Chairs: Atsushi Suzuki (Fujita Health University, Division of Endocrinology and Metabolism)

Ritsuko Masuyama (Nagasaki University Graduate School of Biomedical Sciences)

- O-120 *Enpp1* regulates *Klotho* expression under phosphate overload conditions**
Ryuichi Watanabe¹, Takeshi Miyamoto¹, Toshimi Michigami², Seiji Fukumoto³, Morio Matsumoto¹, Masaya Nakamura¹
(Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan¹, Department of Bone and Mineral Research, Osaka Medical Center and Research Institute for Maternal and Child Health, Izumi, Osaka², Fujii Memorial Institute of Medical Sciences, Tokushima University, Tokushima, Tokushima³)
- O-121 The signal pathway of phosphate and regulatory mechanisms of FGF23 in bone**
Yuichi Takashi^{1,2}, Yuka Kinoshita², Nobuaki Ito², Maria Tsoumpra¹, Shun Sawatsubashi¹, Toshio Matsumoto¹, Seiji Fukumoto¹
(Fujii Memorial Institute of Medical Sciences, Institute of Advanced Medical Sciences, Tokushima University, Tokushima, Japan¹, Division of Nephrology and Endocrinology, The University of Tokyo Hospital, Tokyo, Japan²)
- O-122 Elevation of FGF23 in Bone Tissue occurs via the Alteration of DMP1 as well as PKA Pathway caused by excessive PTH in Primary Hyperparathyroidism**
Yuki Nagta, Yasuo Imanishi, Daichi Miyaoka, Noriyuki Hayashi, Masaya Ohara, Masaaki Inaba
(Department of Metabolism, Endocrinology and Molecular Medicine, Osaka City University Graduate School of Medicine, Osaka, Japan)
- O-123 Role of Nupr1/p8 in autophagy and apoptosis of osteoclasts**
Makoto Shiraki¹, Xianghe Xu¹, Asana Kamohara¹, Masaaki Mawatari², Akiko Kukita¹
(Department of Microbiology, Faculty of Medicine, Saga University, Saga, Japan¹, Department of Orthopaedic Surgery, Faculty of Medicine, Saga University, Saga, Japan²)

- O-124 Calcitonin of marsupials and monotremes has strong bioactivity**
Teruhito Yamashita¹, Nobuyuki Udagawa², Hirose Yamauchi³, Nobuo Suzuki⁴, Shunsuke Uehara², Yasuhiro Kobayashi¹, Naoyuki Takahashi¹
(Institute for Oral Science, Matsumoto Dental University, Nagano, Japan¹, Department of Oral Biochemistry, Matsumoto Dental University, Nagano, Japan², Japan Osteoporosis Foundation, Tokyo, Japan³, Institute of Nature and Environmental Technology, Kanazawa University, Ishikawa, Japan⁴)
- O-125 CCR5, a therapeutic target of HIV infection, is required for osteoclast differentiation and function, suggesting a skeletal merit of the CCR5 targeting HIV therapy**
Ji-Won Lee¹, Shunsuke Uehra², Yasuhiro Kobayashi³, Akira Yamaguchi⁴, Yuuki Imai⁵, Tadahiro Iimura^{1,6,7,8}
(Division of Bio-Imaging, Proteo-Science Center, Ehime University, Ehime, Japan¹, Department of Biochemistry, Matsumoto Dental University, Nagano, Japan², Institute for Oral Science, Matsumoto Dental University, Nagano, Japan³, Oral Health Science Center, Tokyo Dental College, Tokyo, Japan⁴, Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University, Ehime, Japan⁵, Division of Analytical Bio-Medicine, Advanced Research Support Center (ADRES), Ehime University, Ehime, Japan⁶, Artificial Joint Integrated Center, Ehime University Hospital, Ehime, Japan⁷, Graduate School of Medicine, Ehime University, Ehime, Japan⁸)

Oral 22 Secondary osteoporosis 1 14:00-15:00

Room 4 / SHIKA 2 (5F)

Chairs: Yoshitaka Morita (Department of Rheumatology, Kawasaki Medical School)

Ikuko Tanaka (Nagoya Rheumatology Clinic)

- O-126 Discriminatory ability of trabecular bone score for vertebral compression fractures in thype2 diabetes patients**
Maiko Hajime¹, Yosuke Okada¹, Kenichi Tanaka¹, Akira Kurozumi¹, Manabu Narisawa¹, Keiichi Torimoto¹, Koichi Nakagami², Takatoshi Aoki², Masanori Korogi², Yoshiya Tanaka¹
(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan¹, Radiology Department, University of Occupational and Environmental Health, Japan²)
- O-127 Association of bone mineral density, bone turnover markers, and vertebral fractures with all-cause mortality in type 2 diabetes mellitus**
Ippei Kanazawa, Hitomi Miyake, Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine, Shimane, Japan)
- O-128 Cross-sectional evaluation of bone metabolism in male patients with type 2 diabetes**
Reiko Watanabe, Nobuyuki Tai, Junko Hirano, Yoshiyuki Ban, Daisuke Inoue, Ryo Okazaki
(Third Department of medicine, Teikyo University Chiba Medical Center)
- O-129 Increased oxidative stress is associated with prevalent vertebral fracture in the patients with type 2 diabetes**
Masahiro Yamamoto, Mika Yamauchi, Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine, Shimane, Japan)
- O-130 An investigation of the relationship between low bone quality and metabolic abnormality in type 2 diabetes mellitus**
Keiichi Torimoto¹, Yosuke Okada¹, Kenichi Tanaka¹, Maiko Hajime¹, Akira Kurozumi¹, manabu Narisawa¹, Koichi Nakagami², Takatoshi Aoki², Yukunori Korogi², Yoshiya Tanaka¹
(The first Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Fukuoka, Japan¹, The Department of Radiology, School of Medicine, University of Occupational and Environmental Health, Fukuoka, Japan²)
- O-131 Effects of low intensity aerobic exercise and vitamin D analog, alfacalcidol, on bone and muscle in diabetic model rats**
Manabu Akagawa, Naohisa Miyakoshi, Yuji Kasukawa, Yuichi Ono, Masazumi Suzuki, Tetsuya Kawano, Yusuke Yuasa, Itsuki Nagahata, Yoichi Shimada
(Department of orthopedic surgery, Akita university hospital, Akita, Japan)

Chairs: Hisataka Yasuda (Nagahama Institute for Biochemical Science, Oriental Yeast Co., Ltd.)

Takashi Nakamura (Department of Biochemistry, Tokyo Dental College)

- O-132 Loss of BMP-inducible gene Atoh8 in mice decreases bone mass**
 Yuhei Yahiro^{1,2}, Shingo Maeda¹, Masato Morikawa³, Daizou Koinuma³, Naohiro Shinohara^{1,2}, Ichiro Kawamura^{1,2}, Daisuke Sakuma^{1,2}, Yasuhiro Ishidou^{1,2}, Ryoichiro Kageyama⁴, Kohei Miyazono³, Setsuro Komiyama^{1,2}
 (Department of Medical Joint Materials, Kagoshima University, Kagoshima, Japan¹, Department of Orthopaedic Surgery, Kagoshima University, Kagoshima, Japan², Department of Molecular Pathology, University of Tokyo, Tokyo, Japan³, Institute for Virus Research, Kyoto University, Kyoto, Japan⁴)
- O-133 In vivo Dynamic visualization of bone tissue regeneration in BMP2-Induced ectopic ossification**
 Kunihiro Hashimoto^{1,2}, Masayuki Furuya¹, Hideki Yoshikawa¹, Masaru Ishii², Takashi Kaito¹
 (Department of Orthopedic Surgery, Graduate School of Medicine, Osaka University, Osaka, Japan¹, Department of Immunology and Cell Biology, Graduate School of Medicine and Frontier Biosciences, Osaka University²)
- O-134 PLLA-nanosheets loaded with BMP-2 induce bone regeneration in critical-sized mouse calvarial defects**
 Yasutaka Murahashi¹, Kuo-Chin Huang², Fumiko Yano¹, Yoshiaki Kitaura³, Song Ho Chang¹, Sakae Tanaka¹, Kazuhiko Ishihara⁴, Yousuke Okamura⁵, Toru Moro⁶, Taku Saito¹
 (The Department of Orthopaedic Surgery, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan¹, Graduate Institute of Clinical Medical Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan², Department of Sensory and Motor System Medicine, The University of Tokyo Graduate School of Medicine, Tokyo, Japan³, Department of Materials Engineering, School of Engineering, The University of Tokyo, Tokyo, Japan⁴, Institute of Innovative Science and Technology, Tokai University, Kanagawa, Japan⁵, Division of Science for Joint Reconstruction, Faculty of Medicine, The University of Tokyo, Tokyo, Japan⁶)
- O-135 Development of blocking antibodies for ALK2, which induces heterotopic ossification in soft tissues**
 Takenobu Katagiri¹, Shinnosuke Tsuji², Sho Tsukamoto¹, Satoshi Ohte¹, Keigo Kumagai¹, Kenji Osawa¹, Kiyosumi Takaishi²
 (Division of Pathophysiology, Research Center for Genomic Medicine, Saitama University, Saitama, Japan¹, Rare Disease & LCM Laboratories, R&D Division, Daiichi-Sankyo Co., Ltd., Tokyo, Japan²)
- O-136 LRF/OCZF regulates survival of osteoclasts via Sam68, a splicing regulator of BCL-X**
 Xianghe Xu^{1,2}, Makoto Shiraki^{1,3}, Asana Kamohara^{1,4}, Takeo Shobuike¹, Toshio Kukita², Akiko Kukita¹
 (Department of Microbiology, Faculty of Medicine, Saga University, Japan¹, Department of Molecular Cell Biology & Oral Anatomy, Faculty of Dentistry, Kyushu University², Department of Orthopaedic Surgery, Faculty of Medicine, Saga University³, Department of Oral & Maxillofacial Surgery, Faculty of Medicine, Saga University⁴)

Chairs: Makoto Osaki (Department of Orthopaedic Surgery, Nagasaki University Graduate School of Biomedical Sciences)

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

- O-137 The Clinical Benefits of Denosumab for Prophylaxis of Steroid-induced Osteoporosis in Patients with Pulmonary Disease**
 Shigeo Ishiguro¹, Shigenori Nakagawa¹, Kentaro Ito², Osamu Hataji²
 (Matsusaka Municipal Hospital, Orthopaedic Surgery, Mie, Japan,¹ Matsusaka Municipal Hospital, Respiratory Center²)
- O-138 The relationship between severity of chronic obstructive pulmonary disease and bone metabolism marker**
 Manabu Tsukamoto¹, Toshiharu Mori¹, Yasuaki Okada¹, Hokuto Fukuda¹, Ke-Yong Wang², Kazuhiro Yatera³, Akinori Sakai¹
 (Department of Orthopaedic Surgery, University of Occupational and Environmental Health, Kitakyushu, Japan¹, Shared-Use Research Center, University of Occupational and Environmental Health, Kitakyushu, Japan², Department of Respiratory Medicine, University of Occupational and Environmental Health, Kitakyushu, Japan³)
- O-139 Clinical benefits of early intervention with denosumab and alendronate in patients with systemic rheumatic diseases treated with high dose glucocorticoid**
 Yosuke Okada, keiichi Torimoto, Kazuhisa Nakano, Ippei Miyagawa, Satoshi Kubo, Shigeru Iwata, Shingo Nakayamada, Kazuyoshi Saito, Yoshiya Tanaka
 (The First Department of Internal Medicine, University of Occupational and Environmental Health Japan, Kitakyushu, Japan)
- O-140 Antiretroviral therapy for HIV infection enhances fracture risk by impairing bone quality**
 Hiroyuki Hirakawa¹, Hiroyuki Gatanaga², Hiroki Ochi¹, Kyoko Hashimoto¹, Satoko Sunamura¹, Shinichi Oka², Shu Takeda¹, Shingo Sato¹
 (Department of Physiology and Cell Biology, Tokyo Medical and Dental University Graduate School and Faculty of Medicine, Tokyo, Japan¹, AIDS Clinical Center, National Center for Global Health and Medicine, Tokyo, Japan²)
- O-141 Evaluation of the treatment strategies for medication-related osteonecrosis of the jaws (MRONJ) and the factors affecting treatment outcome with propensity score matching analysis**
 Saki Hayashida, Masahiro Umeda
 (Department of Clinical Oral Oncology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan)
- O-142 Effect and immunohistochemical analysis of treating hindlimb-unloaded osteoporosis model mice with alendronate**
 Gaku Miyamura^{1,2}, Hiroki Wakabayashi¹, Nobuto Nagao¹, Youhei Naitou¹, Akihiro Sudo¹
 (Department of Orthopaedic Surgery, Graduate school of Medicine, Mie University, Mie, Japan¹, Department of Orthopaedic Surgery, Suzuka General Hospital, Mie, Japan²)

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

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

- O-143 A missense single nucleotide polymorphism in the ALDH2 gene, rs671, is associated with hip fractures**
 Kenichiro Takeshima, Takeshi Miyamoto, Morio Matsumoto, Masaya Nakamura
 (Department of Orthopedic Surgery, Keio University School of Medicine, Tokyo, Japan)
- O-144 Muscle-specific Vitamin D Receptor (VDR) ablation results in reduced grip power and altered gene expression pattern in mice**
 Maria K Tsoumpra¹, Itsuro Endo², Shun Sawatsubashi¹, Yuichi Takashi¹, Seiji Fukumoto¹, Toshio Matsumoto¹
 (Fujii Memorial Institute of Medical Sciences, Tokushima University, Japan¹, Department of Medicine and Bioregulatory Sciences, University of Tokushima Graduate School of Medical Sciences, Tokushima, Japan²)
- O-145 Low 25 Hydroxy-vitamin D [25(OH)D] plasma levels in patients with connective tissue disease treated with high dose corticosteroid therapy is a risk factor for femoral head necrosis**
 Kazuhisa Nakano, Masahiro Saito, Shingo Nakayamada, Kaoru Yamagata, Shigeru Iwata, Satoshi Kubo, Ippei Miyagawa, Yosuke Okada, Yoshiya Tanaka
 (The First Department of Internal Medicine, School of Medicine, University of Occupational and Environmental Health, Japan)
- O-146 Apolipoprotein E maintains bone mass by promoting osteoblast differentiation via ERK1/2 and by suppressing osteoclast differentiation via cFos, NFATc1, and NF-κB**
 Takaaki Noguchi¹, Kosuke Ebina², Shigeyoshi Tsuji¹, Kazuma Kitaguchi², Jun Hashimoto¹, Hideki Yoshikawa²
 (Department of Orthopaedics, Osaka Minami Medical Center, Osaka, Japan¹, The Department of Orthopaedics, University of Osaka, Osaka, Japan²)
- O-147 Rikkunshito inhibits teriparatide-induced nausea in rats via ghrelin-signaling pathway**
 Koiuichi Yamamoto¹, Yukihiro Isogai², Keisuke Hagihara³
 (Department of Medical Science and Technology, Division of Health Sciences, Graduate School of Medicine, Osaka University, Osaka, Japan¹, Medical Affairs Department, Pharmaceutical Business Administration Division, Asahi Kasei Pharma Corporation, Tokyo, Japan², Department of Advanced Hybrid Medicine, Graduate School of Medicine, Osaka University, Osaka, Japan³)
- O-148 The effect of direct renin inhibitor on diabetic bone disease**
 Shunsuke Goto
 (Division of Nephrology and Kidney Center, Kobe University Graduate School of Medicine, Kobe, Japan)

Chairs: Naohisa Miyakoshi (Department of Orthopedic Surgery, Akita University Graduate School of Medicine)

Hiroshi Hagino (Tottori University)

- O-149 The efficacy of transition from weekly teriparatide to denosmab for severe osteoporosis**
 Masayuki Miyagi, Hisako Fujimaki, Koji Naruse, Gen Inoue, Kentaro Uchida, Masashi Takaso
 (Department of Orthopaedic Surgery, Kitasato University, School of Medicine)
- O-150 Post-operative chemotherapy decrease the bone mineral density of patients with squamous cell carcinoma of middle esophagus**
 Xiangmei Zhang¹, Ming He², Xin Chen², Jidong Zhao², Yunjiang Liu³, Baoen Shan¹
 (Provincial Key Laboratory of Tumor Genetic Diagnosis, Prevention and Therapy; Research Center, The Fourth Hospital of Hebei Medical University, Shijiazhuang City, Hebei Province, China¹, The Fifth Department of Thoracic Surgery, The Fourth Hospital of Hebei Medical University, Shijiazhuang City, Hebei Province, China², Breast Center, The Fourth Hospital of Hebei Medical University, Shijiazhuang City, Hebei Province, China³)
- O-151 Effectiveness and safety of bisphosphonates in patients with post-surgical breast cancer complicated with osteoporosis due to aromatase inhibitors therapy**
 Mizue Tanaka¹, Yasuhiro Takeuchi²
 (Kawakita medical 8588 foundation Kawakita general hospital¹, Toranomon hospital endocrine center²)
- O-152 Higher frequencies of teriparatide develops cortical porosity in ovariectomized rats**
 Aya Takakura^{1,2}, Ji-Won Lee³, Ryoko Takao-Kawabata¹, Tadahiro Iimura^{2,3,4,5}
 (Pharmaceuticals Research Center, Asahi Kasei Pharma Corporation, Shizuoka, Japan¹, Graduate School of Medicine, Ehime University, Ehime, Japan², Division of Bio-Imaging, Proteo-Science Center (PROS), Ehime University, Ehime, Japan³, Division of Analytical Bio-Medicine, Advanced Research Support Center (ADRES), Ehime University, Ehime, Japan⁴, Artificial Joint Integrated Center, Ehime University Hospital, Ehime, Japan⁵)
- O-153 Role of prostaglandin E₂ in prostate cancer metastases and angiogenesis**
 Shosei Yoshinouchi¹, Kenta Watanabe², Tsukasa Tominari¹, Michiko Hirata¹, Chiho Matsumoto¹, Takayuki Maruyama³, Masaki Inada^{1,2}, Chisato Miyaura^{1,2}
 (Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan¹, Global Innovation Research Organization, Tokyo University of Agriculture and Technology, Tokyo, Japan², Minase Research Institutes, Ono Pharmaceutical Co. Ltd³)
- O-154 The analysis of bone microstructure of anorexia nervosa by HR-pQCT: A case report**
 Shohei Matsubayashi¹, Ko Chiba¹, Kazuaki Yokota¹, Narihiro Okazaki¹, Ritsu Tsujimoto¹, Makoto Osaki¹, Kenji Koyanagi², Yumi Nishikii³
 (Department of Orthopedic Surgery, Graduate School of Biomedical Sciences, University of Nagasaki, Nagasaki, Japan¹, Nagasaki Prefectural Center of Medicine and Welfare for Children, Nagasaki, Japan², Nagasaki National Hospital, Nagasaki, Japan³)

Chairs: Teruki Sone (Department of Nuclear Medicine, Kawasaki Medical School)
Takatoshi Aoki (Department of Radiology, University of Occupational and
Environmental Health School of Medicine)

- O-155 Classification of bone loss based on microstructure: a study by HR-pQCT**
Ko Chiba, Narihiro Okazaki, Kazuaki Yokota, Makoto Osaki
(Department of Orthopedic Surgery, Nagasaki University)
- O-156 Relationship of bone turnover with bone microstructure in Japanese healthy women assessed by HR-pQCT**
Narihiro Okazaki, Ko Chiba, Kazuaki Yokota, Makoto Osaki
(Department of Orthopaedic Surgery, Nagasaki University Hospital, Nagasaki, Japan)
- O-157 Assessment of 3-month changes in bone microstructure under anti-TNF α therapy in patients with rheumatoid arthritis using HR-pQCT**
Tomohiro Shimizu¹, Helmiere Urusula², Norimasa Iwasaki¹, Li Xioajuan²
(Department of Orthopaedic Surgery, School of Medicine, University of Hokkaido, Sapporo, Japan¹, University of California, San Francisco, USA²)
- O-158 Bone Microstructure Analysis of age related changes. A cross section study using HR-pQCT**
Kazuaki Yokota, Ko Chiba, Narihiro Okazaki, Makoto Osaki
(Department of Orthopaedic Surgery, Nagasaki University Graduate School of Biomedical Sciences.)
- O-159 Femoral neck strength prediction in osteoporosis patients: trabecular bone analysis using tomosynthesis images**
Yo Todoroki¹, Takatoshi Aoki¹, Masami Fujii¹, Shinpei Yamaguchi¹, Akitaka Fujisaki¹, Yoshiko Hayashida¹, Kazuhisa Nakano², Yosuke Okada², Kazuyoshi Saito², Yoshiya Tanaka², Yukunori Korogi¹
(Department of Radiology, University of Occupational and Environmental Health, Kitakyushu, Japan¹, First Department of Internal Medicine, University of Occupational and Environmental Health, Kitakyushu, Japan²)
- O-160 Relation between bone strength and muscle strength in osteoporotic patients**
Kosei Yoh¹, Kiyoshi Tanaka²
(Orthopedic Surgery, Aino Hospital, Ibaraki, Japan¹, Faculty of Home Economics²)

Chairs: Kunihiro Yamaoka (Keio University School of Medicine, Division of Rheumatology)

Shinya Tanaka (Department of orthopaedic surgery, Saitama medical university)

- O-161 Intraarticular injection of I kappa B alpha kinase inhibitor inhibits osteoarthritis development of surgically-induced mouse model via downregulation of NF-kappa B**
Yasutaka Murahashi, Fumiko Yano, Sakae Tanaka, Taku Saito
(The Department of Orthopaedic Surgery, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan)
- O-162 Plasminogen activator inhibitor-1 (PAI-1) suppresses subchondral osteopenia induced by knee osteoarthritis of mice**
Akihiro Moritake^{1,2}, Naoyuki Kawao², Kiyotaka Okada², Kohei Tatsumi², Masayoshi Ishida², Katsumi Okumoto³, Osamu Matsuo², Masao Akagi¹, Hiroshi Kaji²
(Department of Orthopaedic Surgery, Kindai University, Osaka, Japan¹, Department of Physiology and Regenerative Medicine, Kindai University, Osaka, Japan², Life Science Research Institute, Kindai University, Osaka, Japan³)
- O-163 JAK1/2 inhibitor, baricitinib, inhibits osteoclast differentiation via suppressing RANKL expression in osteoblasts**
Kohei Murakami^{1,2}, Yasuhiro Kobayashi², Shunsuke Uehara³, Takako Suzuki¹, Nobuyuki Udagawa³, Naoyuki Takahashi², Yukio Nakamura¹
(Department of Orthopaedic Surgery, Shinshu University School of Medicine, Matsumoto, Japan¹, Division of Hard Tissue Research, Institute for Oral Science, Matsumoto Dental University, Japan², Department of Biochemistry, Matsumoto Dental University, Japan³)
- O-164 Effects of denosumab treatment on bone mineral density and joint destruction in patients with rheumatoid arthritis**
Takeshi Mochizuki
(Department of Orthopaedic Surgery, University of Tokyo, Tokyo, Japan)
- O-165 Serum 25-hydroxyvitamin D status in patient with psoriatic arthritis**
Shigeyoshi Tsuji¹, Jun Hashimoto², Takaaki Noguchi¹, Shirou Ohshima¹, Yukihiro Saeki³, Mari Higashiyama⁴
(Department of Rheumatology and Allergology¹, Department of Clinical Research/Rheumatology and Allergology², Department of Clinical Research³, Department of Dermatology, Nissay Hospital⁴)
- O-166 Establishment of autoinflammatory disease model in mice**
Takatsugu Oike, Takeshi Miyamoto, Morio Matsumoto, Masaya Nakamura
(Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan)

Chairs: Akinori Sakai (Department of Orthopaedic Surgery, University of Occupational and Environmental Health)

Taro Mawatari (Department of Orthopaedic Surgery, Hamanomachi Hospital)

- O-167 Preventive effect of pain and bone metabolism by TRPV1 inhibitor in the regional osteoporotic lesion in tail-suspension mouse model**
 Megumi Hanaka, Kousuke Iba, Takayuki Dohke, Kumiko Kanaya, Yasuhisa Abe, Toshihiko Yamashita
 (Department of Orthopaedic Surgery, Sapporo Medical University School of Medicine, Sapporo, Japan)
- O-168 Therapeutic effect of activated bone marrow derived- mesenchymal stem cells on postmenopausal osteoporosis in rats**
 Akria Saito^{1,2}, Kanna Nagaishi³, Kousuke Iba¹, Toshihiko Yamashita¹, Mineko Fujimiya³
 (Department of Orthopaedic Surgery, Sapporo Medical University School of Medicine, Sapporo, Japan.¹, Department of Orthopaedic Surgery, Saiseikai Otaru Hospital, Otaru, Japan.², Department of Second Anatomy, Sapporo Medical University School of Medicine, Sapporo, Japan.³)
- O-169 Association between the serum biomaker and muscle mass,muscle strength,gait speed,and bone mass in community-dwelling middle-aged and older adults**
 Kenta Moriwaki¹, Hiromi Matsumoto², Hiroshi Hagino³
 (Department of Orthopedic Surgery, Tottori University Hospital, Yonago, Japan¹, Rehabilitation Division, Tottori University Hospital, Yonago, Japan², School of Health Science, Faculty of Medicine, Tottori University, Yonago, Japan³)
- O-170 The relationship between bone turn over markers or bone mineral density or muscle mass and low back pain in primary osteoporosis patients**
 Daisuke Ishi¹, Masayuki Miyagi¹, Hisako Fujimaki¹, Gen Inoue¹, Kentaro Uchida¹, Sumihisa Orita^{1,2}, Kazuhide Inage², Kazuki Fujimoto², Seiji Ohtori², Masashi Takaso¹
 (Department of Orthopedic Surgery, Kitasato University, School of Medicine, Sagamihara, Japan¹, Department of Orthopedic Surgery, Graduate School of Medicine, Chiba University, Chiba, Japan²)
- O-171 The effect of alendronate in a mouse model of osteoporotic pain**
 Nobuto Nagao, Hiroki Wakabayashi, Gaku Miyamura, Sho Kato, Yohei Naito, Akihiro Sudo
 (Department of Orthopaedic Surgery, Mie University Graduate School of Medicine, Mie, Japan)
- O-172 Response of hand bone mineral density to osteoporosis treatment and its association with incident vertebral fracture**
 Shozo Sasaki, Tetusi Osada
 (Orthopedic department, Ushioda general hospital, Yokohama, Japan)

Chairs: Asuka Terashima (Department of Osteoimmunology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo)

Ken-ichi Tezuka (Gifu University Graduate School of Medicine)

- O-173 Modeling of bone remodeling by three-dimensional co-culture of mouse embryonic stem cell-derived osteoblasts and osteoclast precursors**
 Denise C Zujur¹, Atsuhiko Hikita², Kosuke Kanke³, Hironori Hojo¹, Yuichi Tei¹, Shinsuke Ohba⁴
 (Department of Bioengineering, Graduate School of Engineering, The University of Tokyo¹, Department of Cartilage and Bone Regeneration, Graduate School of Medicine, The University of Tokyo², Department of Oral and Maxillofacial Surgery, The University of Tokyo Hospital³, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo⁴)
- O-174 Regeneration of cartilage tissue after application of IL-6R-treated mesenchymal stem cells (MSCs) with a novel delivering scaffold for the treatment of RA**
 Kaoru Yamagata¹, Shingo Nakayamada¹, Masahiro Kondo², Yoshiya Tanaka¹
 (The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan, Fukuoka, Japan¹, Mitsubishi Tanabe Pharma Corporation, Yokohama, Japan²)
- O-175 Hematopoietic stem cells and macrophages are involved in bone repair impaired by diabetes**
 Takeshi Shimoide^{1,2}, Yukinori Tamura³, Kiyotaka Okada¹, Naoyuki Kawao¹, Nobuharu Kurashimo⁴, Katsumi Okumoto⁴, Kohei Tatsumi¹, Masayoshi Ishida¹, Hiroshi Kaji¹
 (Department of Physiology and Regenerative Medicine, Kindai University Faculty of Medicine, Osaka, Japan¹, Department of Oral and Maxillofacial Surgery, Kindai University Faculty of Medicine, Osaka, Japan², Department of Nutrition, Kobe Gakuin University The Faculty of Nutrition, Hyogo, Japan³, Life Science Research Institute, Kindai University, Osaka, Japan⁴)
- O-176 Enhancement of bone regeneration using de-differentiated cells spheroids**
 Tsukasa Yanagi¹, Hiroshi Kajiya^{2,3}, Ayaka Imamura^{2,4}, Kae Kakura¹, Koji Okabe³, Hirofumi Kido¹, Jun Ohno²
 (Oral Implantology, Department of Oral Rehabilitation, Fukuoka Dental College, Fukuoka, Japan¹, Research Center for Regenerative Medicine, Fukuoka Dental College, Fukuoka, Japan², Cellular Physiology, Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Fukuoka, Japan³, Dentistry for handicapped, Department of Oral Growth and Development, Fukuoka Dental College, Fukuoka, Japan⁴)
- O-177 Investigation of the regulatory mechanism for cell function on mesenchymal stem cells in periodontal regeneration by micro RNA**
 Tomoyuki Iwata^{1,2}
 (Department of Periodontal Medicine, Division of Applied Life Sciences, Institute of Biomedical and Health Sciences, Hiroshima University, Hiroshima, Japan¹, Department of Periodontics, Hiroshima University Hospital, Hiroshima, Japan²)
- O-178 Osteoblast differentiation by Low Adhesive Scaffold Collagen purified from pig shinbone**
 Saori Kunii¹, Yoshitaka Horiuchi³, Ei Yamamoto², Yoshinori Kuboki⁴, Koichi Morimoto¹
 (Department of Genetic Engineering, Kindai University, Wakayama, Japan¹, Department of Biomedical Engineering, Kindai University, Wakayama, Japan², Kindai University Life Science Research Institute, Osaka-Sayama, Japan³, Hokkaido University, professor emeritus⁴)

Chairs: Masaaki Inaba (Osaka City University Medical School)
Satoshi Mori (Bone Joint Surgery, Seirei Hamamatsu General Hospital)

- O-179 How many patients need osteoporosis treatment in general clinic?**
Satoshi Sasaki¹, Naohisa Miyakoshi², Yuji Kasukawa², Yoichi Shimada²
(Higashinaruse national health insurance clinic, Akita, Japan¹, Akita University Graduate School of Medicine, Department of Orthopedic Surgery, Akita, Japan²)
- O-180 Dietary pattern analysis in patients with osteoporosis**
Kiyoshi Tanaka¹, Kousei Yoh²
(Department of Food and Nutrition, Kyoto Women's University¹, Orthopedic Surgery, Aino Hospital, Ibaraki, Japan²)
- O-181 Percentage and possibility of drug holiday of patients treated with bisphosphonates more than five years**
Yuji Kasukawa, Naohisa Miyakoshi, Michio Hongo, Koji Nozaka, Yoshinori Ishikawa, Hiroyuki Tsuchie, Daisuke Kudo, Yoichi Shimada
(Department of Orthopedic Surgery, Akita University Graduate School of Medicine)
- O-182 Short term results in combination treatment of denosumab and teriparatide**
Hitoshi Tanigawa^{1,2}, Yuichiro Tamagawa³
(The Department of Orthopaedics, Kusatsu General Hospital, Shiga, Japan¹, The Department of Orthopaedics, Shiga University of Medical Science, Shiga, Japan², The Department of General Medicine, Kusatsu General Hospital, Shiga, Japan³)
- O-183 We should prescribe active vitamin D for the introduction of denosumab; it is from medication experience of 500 examples in four years**
Reo GOTO
(Abashiri Kousei General Hospital department of orthopaedic surgery)
- O-184 Risk factors for denosumab-induced decrement in serum calcium in patients with osteoporosis**
Daichi Miyaoka, Yasuo Imanishi, Masaya Ohara, Noriyuki Hayashi, Yuki Nagata, Masaaki Inaba
(Department of Metabolism, Endocrinology and Molecular Medicine, Osaka City University Graduate School of Medicine, Osaka, Japan)
- O-185 Atypical Subtrochanteric Fractures in Korean Hip Fracture Study; Atypical Femoral Fracture in East Asian**
Yong-Chan Ha¹, Young-Kyun Lee², Tae-Young Kim³, Seak Ki Yun⁴
(Department of Orthopaedic Surgery, Chung-Ang University College of Medicine, Seoul, South Korea¹, Department of Orthopedic Surgery, Seoul National University Bundang Hospital, Seongnam, South Korea², Department of Orthopaedic Surgery, Hallym University Sacred Heart Hospital, Anyang, South Korea³, Department of Internal Medicine, Cheonan Endo Medical Clinic, Cheonan, Korea⁴)

Chairs: Riko Kitazawa (Department of Molecular Pathology, Ehime University Graduate School of Medicine)

Toshio Kukita (Molecular Cell Biology & Oral Anatomy, Faculty of Dental Science, Kyushu University)

- O-186 Disruption of bone matrix anisotropy in metastasized bone**
 Aira Matsugaki, Takayoshi Nakano
 (Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University)
- O-187 MET/VEGFR/FMS signaling contributed prostate cancer induced osteoclast differentiation and bone destruction**
 Kenta Watanabe¹, Michiko Hirata², Tsukasa Tominari², Chiho Matsumoto², Hidenori Fujita³, Kazuhiko Yonekura³, Chisato Miyaura^{1,2}, Masaki Inada^{1,2}
 (Global Innovation Research Organization, Tokyo University of Agriculture and Technology, Tokyo, Japan¹, Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan², Tsukuba Research Center, Taiho Pharmaceutical Co., Ltd.³)
- O-188 Extracellular vesicles from bone metastatic mammary tumor cells facilitate osteoclast formation and bone resorption in vitro**
 Norihisa Uehara¹, Yukari Kyumoto¹, Akiko Kukita², Toshio Kukita¹
 (Department of Molecular Cell Biology & Oral Anatomy, Kyushu University, Fukuoka, Japan¹, Microbiology, Faculty of Medicine, Saga University²)
- O-189 The role of cancer-associated Sialyl-Tn antigen in developing metastatic bone lesions**
 Hiroki Hamano, Masahiko Takahata, Yusuke Kameda, Tomohiro Shimizu, Shigeto Hiratsuka, Masahiro Ota, Dai Sato, Norimasa Iwasaki
 (Department of Orthopedic Surgery, School of Medicine, Hokkaido University, Sapporo, Japan)
- O-190 The immunohistological analysis of the characteristics of osteoclast related factors in giant cell tumor of bone**
 Isao Shibuya¹, Masamichi Tatami², Shigeru Nakamura¹, Ryutarou Kamijyo³
 (Department Orthopedic Surgery, Teikyo University Mizonokuchi Hospital, Tokyo, Japan¹, Department of Pharmacology, School of Dentistry, Showa University, Tokyo, Japan², Department of Oralbiochemistry, School of Dentistry, Showa University, Tokyo, Japan³)
- O-191 Diversity of mode of invasion into jaw bone in oral squamous cell carcinoma by difference of microenvironment**
 Sousuke Takahata¹, Tomonao Aikawa¹, Kazuaki Miyagawa¹, Eijiro Jimi², Mikihiro Kogo¹
 (The First Department of Oral and Maxillofacial Surgery, Osaka University Graduate School of Dentistry, Suita, Osaka, Japan¹, The OBT Research Center, Kyushu University Faculty of Dental Science, Fukuoka, Osaka, Japan²)
- O-192 Osteoblastic β 2 Adrenergic Receptor Increases Immunosuppressive Activity of CD11b+Gr1+ Myeloid-Derived Suppressor Cells in Bone Metastasis**
 Serk In Park
 (Department of Biochemistry and Molecular Biology, Korea University College of Medicine, Seoul, Korea)

Chairs: Eijiro Jimi (OBT Research Center Kyushu University Faculty of Dental Science)

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

- O-193 Identification of a chondrocyte-specific *Ihh* enhancer and *Sox9*-mediated mechanisms of the enhancer activation**
Akira Yamakawa¹, Hironori Hojo², Ung-il Chung^{1,2}, Shinsuke Ohba¹
(Division of Clinical Biotechnology, Center for Disease Biology and Integrative Medicine, Faculty of Medicine, The University of Tokyo, Tokyo, Japan¹, Department of Bioengineering, School of Engineering, The University of Tokyo, Tokyo, Japan²)
- O-194 Osterix regulates expression of a *Wnt* antagonist *FRZB* by forming a transcription factor complex with *Msx2***
Hiroko Yagi^{1,2}, Tomohiko Murakami¹, Yoshihumi Takahata¹, Eriko Nakamura¹, Junpei Kida¹, Shinya Murakami², Kenji Hata¹, Riko Nishimura¹
(Department of Molecular and Cellular Biochemistry, Osaka University Graduate School of Dentistry, Osaka, Japan¹, Department of Periodontology, Osaka University Graduate School of Dentistry, Osaka, Japan²)
- O-195 Elucidation of *TRAF6*-dependent molecular mechanisms of cell fusion during osteoclastogenesis**
Yo Yumiketa, Yuu Taguchi, Jun-ichiro Inoue
(Division of Cellular and Molecular Biology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan)
- O-196 The nuclear receptor *AhR* controls bone homeostasis by regulating osteoclast differentiation via the *RANK/c-Fos* signaling axis**
Takashi Izawa¹, Eiji Tanaka¹, Naozumi Ishimaru²
(Department of Orthodontics and Dentofacial Orthopedics, Tokushima University, Tokushima, Japan¹, Department of Oral Molecular Pathology, Tokushima University, Tokushima, Japan²)
- O-197 Ligand-dependent and cell type-specific interactions between *VDR* and *CBS***
Takashi Nakamura^{1,2}, Akiko Kubo², Sayako Honda², Yoko Yamamoto³, Toshifumi Azuma¹, Makoto Suematsu²
(Department of Biochemistry, Tokyo Dental College, Tokyo, Japan¹, Department of Biochemistry, School of Medicine, Keio University, Tokyo, Japan², University of Tokyo Hospital, Tokyo, Japan³)
- O-198 Roles of Osteoblast *AMP*-activated protein kinase in skeletal development and bone mass accumulation**
Ippei Kanazawa, Ayumu Takeno, Kenichiro Tanaka, Masakazu Notsu, Toshitsugu Sugimoto
(Internal Medicine 1, Shimane University Faculty of Medicine, Shimane, Japan)
- O-199 Induction of regulatory T cells and its regulation with insulin-like growth factor/insulin-like growth factor binding protein-4 by human mesenchymal stem cells**
Ippei Miyagawa¹, Shingo Nakayamada¹, Kazuhisa Nakano¹, Kaoru Yamagata¹, Kei Sakata¹, Kunihiro Yamaoka², Yoshiya Tanaka¹
(The First Department of Internal Medicine, University of Occupational and Environmental Health, Japan¹, Division of Rheumatology, Department of Internal Medicine, Keio University, School of Medicine²)

Chairs: Takeshi Imamura (Department of Molecular Medicine for Pathogenesis,
Ehime University Graduate School of Medicine)
Kenji Hata (Osaka University Graduate School of Dentistry)

- O-200 Myeloma Cells Induce High Level of TAF12 Expression in Bone Marrow Stromal Cells, Resulting in Increased Osteoclastogenesis and Myeloma Cell Growth in Response to 1,25(OH)2D3**
Yasuhisa Ohata^{1,2,3}
(Medicine/Hematology-Oncology, Indiana University¹, Department of Oral and Maxillofacial Surgery 1 Osaka University Graduate school of dentistry², Department of Pediatrics Osaka University Graduate School of Medicine³)
- O-201 Control of breast cancer aggressiveness in bone byTRPV1 via increasing HGF production by sensory nerves**
Tatsuo Okui^{1,2}, Masahiro Hiasa^{2,3}, Tsuyoshi Shimo⁴, Akira Sasaki⁴, Toshiyuki Yoneda^{2,5}
(Department of Oral and Maxillofacial Surgery Okayama University Hospital¹, Department of Medicine, Hematology/Oncology, indianapolis, IN, USA², Department of Biomaterials and Bioengineering, University of Tokushima Graduate School of Dentistry, Tokushima, Japan³, Department of Oral and Maxillofacial Surgery and Biopathology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama, Japan⁴, Department of Biochemistry Osaka University of Graduate. School of Dentistry, Osaka, Japan⁵)
- O-202 The expression and role of Neurokinin B/ Neurokinin 3 receptor in oral squamous cell carcinoma**
Kyoichi Obata¹, Tsuyoshi Shimo^{1,2}, Tatsuo Okui², Soichiro Ibaragi¹, Yuki Kunisada², kenichi Matsumoto³, Akira Sasaki^{1,2}
(Department of Oral and Maxillofacial Surgery, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences¹, Okayama University Hospital, Department of Oral and Maxillofacial Surgery (Biopathology)², Division of Oral and Maxillofacial Surgery, Kagawa Prefectural Central Hospital³)
- O-203 Targeting the Vacuolar Proton pump and ASIC3 Decreases Multiple Myeloma-induced Bone Pain**
Masahiro Hiasa^{1,2}, Tatsuo Okui^{1,3}, Toshiyuki Yoneda^{1,4}
(Department of Hematology/Oncology, Indiana University School of Medicine, Indianapolis, USA¹, Department of Biomaterials and Bioengineering, Tokushima University Graduate School, Tokushima, Japan², Department of Oral and Maxillofacial Surgery and Biopathology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan³, Department of Molecular and Cellular Biochemistry, Osaka University Graduate School of Dentistry, Osaka, Japan⁴)
- O-204 Osteoclasts utilize TRAIL for their activation, which is subverted by TAK1 inhibition to trigger apoptosis in osteoclasts as well as myeloma cells by TRAIL**
Hirofumi Tenshin¹, Jumpei Teramachi², Asuka Oda³, Ryota Amachi¹, Masahiro Hiasa⁴, Keiichiro Watanabe¹, Batteredene Ariunzaya³, Masami Iwasa³, Shiro Fujii³, Kumiko Kagawa³, Shingen Nakamura³, Hirokazu Miki³, Itsuro Endo³, Eiji Tanaka¹, Toshio Matsumoto⁵, Masahiro Abe³
(Department of Orthodontics and Dentofacial Orthopedics, Institute of Biomedical Sciences, Tokushima University Graduate School¹, Department of Histology and Oral Histology, Institute of Biomedical Sciences, Tokushima University Graduate School², Department of Hematology, Endocrinology and Metabolism, Institute of Biomedical Sciences, Tokushima University Graduate School³, Department of Biomaterials and Bioengineering, Institute of Biomedical Sciences, Tokushima University Graduate School⁴, Fujii Memorial Institute of Medical Sciences, Tokushima University⁵)

Day1 Thursday, July 27

Student-Resident Poster 16:50-17:40 Poster · Exhibition Room / TSUKUSHI 3 (3F)

Chair: Yuuki Imai (Division of Integrative Pathophysiology, Proteo-Science Center, Ehime University)

- SRP-1 The effect of myostation on corticosteroid-induced osteoporosis and muscle atrophy**
Momoka Makino
(Kawasaki Medical School)
- SRP-2 Correlation between liver function and glucocorticoid-induced osteocyte death in mice**
Shuto Ikeda
(Department of Integrative Pathophysiology, Ehime University Graduate School of Medicine)
- SRP-3 Effect of mechanical repetitive loading on osteocytes around dental implants in rabbit tibiae**
Inoue Maaya
(Medical education development center, Nagasaki univestiry hospital)
- SRP-4 Osteoblastic activity in the modeling region of osteoclast-lacking mice**
Miki Abe
(School of Dental Medicine, Hokkaido University)
- SRP-5 Analysis for osteoclast differentiation using live imaging**
Keita Taniguchi
(Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology)