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**Contact Information**

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**Education**

1983 D.D.S. Osaka University, Osaka, Japan

1987 Ph.D. Biochemistry, Osaka University, Osaka, Japan

**Post Graduate Education and Training**

1987-1988 Postdoctoral Fellow, Osaka University, Osaka, Japan

1989-1992 Postdoctoral Fellow, Department of Microbiology, School of Medicine,

 University of Pennsylvania, Philadelphia, Pennsylvania

**Employment History**

**Academic Appointments**

1988-1994 Research Assistant, Department of Biochemistry, Faculty of Dentistry,

 Osaka University, Osaka, Japan

1994-2002 Assistant Professor, Department of Biochemistry, Faculty of Dentistry,

 Osaka University, Osaka, Japan

2002-2011 Associate Professor, Department of Orthopaedic Surgery, Thomas

 Jefferson University, Philadelphia, PA.

2011-2012 Principal Investigator, Department of Surgery, Division of Orthopaedic

 Surgery, Children’s Hospital of Philadelphia, Philadelphia, PA.

2012-2016 Research Associate Professor, Department of Surgery, Division of Orthopaedic

 Surgery, Perelman School of Medicine, University of Pennsylvania, Philadelphia,

 PA.

2017-2019 Associate Professor, Department of Orthopaedics, University of Maryland School of Medicine

2019 – present Professor, Department of Orthopaedics, University of Maryland School of Medicine

**Professional Society Memberships**

**National:**

1991 – present American Society for Cell Biology

2005 – present Orthopoaedic Research Society

2013 – present Osteoarthritis Research Society International

2013 – present American Bone and Mineral Research Society

**International:**

1983 – present Japanese Society of Bone Metabolism

1995 – present Japanese Society of Cartilage Metabolism

**Honors and Awards**

1998 Investigator Award from Japanese Society for Cartilage Metabolism

1998 Yumikura Award from the Society of Osaka University Faculty of Dentistry

 (Award is given to the person that does the best scientific research in a year)

2017 Travel Research Team Award from American Society of Bone and Mineral Research

**Administrative Service**

**Institutional Service**

1994-2002 Graduate Program in Thesis Committee Member, Osaka University (2-4

students/yr)

2008-2009 Member, Research Committee, Thomas Jefferson University

2010 Member, Curriculum Committee (Graduate Program in Cell and Developemental

 Biology) Thomas Jefferson University

2004-2014 Member, Ph.D. Thesis Committee, Thomas Jefferson University (1-2 students/yr)

2013-2017 Member, Steering Committee, University of Pennsylvania (YZ)

2018- Member, PBSS External Advisory Committee, University of Maryland, Baltimore

**Local and National Service**

2002 Reviewer for Journal of Bone and Mineral Research

2005 Reviewer for Osteoarthritis & Cartilage Journal

2006 Reviewer for Scientific Journal, American Journal of Pathology

2007 Reviewer for Arthritis & Rheumatism Journal

2007-present Reviewer, Bone (1-2/yr)

2007 Organization of the session “Wnt signaling and cartilage”. 20th Annual Meeting

of the Japanese Society of Cartilage Metabolism, Okayama, Japan. March.

2008 Organization of the workshop “Wnt signaling in Skeletal Development and

Diseases”. The 54th Orthopaedic Research Society Annual Meeting, San

Francisco, CA. March.

2010 Reviewer for Arthritis Research and Therapy Journal

2011 Reviewer for Experimental Cell Research Journal

2011-present Reviewer for PLoS ONE Journal (1-2/yr)

2011 Reviewer for Cell Proliferation

2013-present Editorial Board Member, American Journal of Pathology (2-4/yr)

2013-present Reviewer for Osteoarthritis and Cartilage (1-2/yr)

2013 Organization of the local scientific seminar “Orthopaedic Research Club”.

University of Pennsylvania.

2015 Reviewer for Sci Rep Journal

2015 Reviewer for Nature Protocol Journal

2016-present Reviewer for J Bone Miner Res (2-3/yr)

**Grant Reviews**

2008 Welcome Trust, UK

2008 Reumafonds (the Dutch Arthritis Association)

2009 Medical Research Council Grant, UK

2010 Welcome Trust, UK

2012 Orthopaedic Research and Education Foundation

2013 NIH (Ad hoc)

2015 NIH (Ad hoc)

2016 Medical Research Council, UK

2016 NIH (Ad hoc)

2018 NIH (Adhoc)

2019 OREF/MTF grant review (Ad hoc)

 Medical Research Council, UK

**Teaching Service**

1988-1989 Biochemistry and Oral Biochemistry. Required for third year Faculty of Dentistry,

 Osaka University

1988-1989 Biochemistry. Required for first year students of Osaka Industrial College,

 School of Dental Health Care, Osaka, Japan.

1992-2002 Biochemistry, Cell Biology, Molecular Biology and Oral Biochemistry. Required

 For second year Faculty of Dentistry, Osaka University

1992-2002 Biochemistry. Required for first year students of Osaka College School of

Dental Health, Osaka, Japan.

1994-2002 Oral Biochemistry. Mentored 4 Ph.D. students. Graduate course of Faculty of Dentistry, Osaka University.

2002-2014 Participating in Ph.D. Programs, “Tissue Engineering and Regenerative Medicine”

 And “Cell & Developmental Biology”, Jefferson College of Graduate Studies,

 Thomas Jefferson University.

2017- Partcipating in Professor round in the Graduate Program in Molecular Medicine

2018- Participating in the graduate student rotations, University of Maryland Baltimore

2019- Participating in Ph. D. Program (GPLS 645 class)

Mentoring and advising

**Graduate Students**

Osaka University

1994-2002 Graduate student Faculty Mentor (direct mentoring 2 students (MY and JK, Currently Research Assistant); 2-4/yr advising)

Thomas Jefferson University

2004-2014 Graduate student Faculty Mentor (diect mentor (BK, Currently Assistant Professor) and 1-2/yr advising)

University of Maryland, Baltimore

2017- Regular member in Graduate Program in Molecular Medicine.

2018- Direct montroing of a graduate student (SG, 2nd yr)

**Master students**

Thomas Jefferson University

2011-2013 Direct Research Mentor (1, AH)

Children’s Hospital of Philadel[hia

2015-2016 Direct Research Mentor (1, AG)

University of Maryland, Baltimore

2017- Direct Research Mentor (1, KW)

**Residents**

University of Maryland, Baltimore

2018-present Faculty Research Resident Advisor (SW)

**Postdoctroal fellows**

Thomas Jafferson University

2002-2010 Direct Mentoring, 3 fellows (OT, TY (currently Associate Professoe) and RY (currently assistant Professor))

Children’s Hospital of Philadelphia

2011-2016 Direct Mentoring, 4 fellows (SA (currently Research Asssitant), MC, KZ (currently Assistant Professor) and YU (currently Assistant Professor))

University of Maryland, Baltimore

2017-2018 Direct Mentoring, 1 fellow (SI, currently Research Assistant)

**Minors**

University of Maryland, Baltimor

2018 Mentoring a high school student (AS)

2019 Mentoring a medical student (DA)

**Grant Support**

**Active Grants**

2/1/19 – 1/31/2024 1R01AR073181-01A1 (Enomoto-Iwamoto, PI 20%)

 NIH/NIAMS

 Development of Pharmacological Treatment of Osteochondromas

 Annual Direct Costs: $198,000

 Total Direct Costs: $990,000

 To determine therapeutic actions of agonists for retinoic acid nuclear receptor gamma on osteochondroma.

4/1/16 – 3/31/2021 2RO1AR056837-07A1 (Co-I 8%, Iwamoto PI)

 NIH/NIAMS

 Regulation of Skeletal Growth by Nuclear Retinoid Receptors

 Annual Direct Costs: $226,763.

 Total Direct Costs: $1,123,552.

 To analyze the interaction of retinoid signaling with Wnt/β-

 catenin signaling using the genetic mouse system.

7/12/16 – 4/30/2021 1R01AR070099-01 (Enomoto-Iwamoto, PI 33%)

 NIH/NIAMS

 Stimulation of Tendon Repair by Metabolic Modifiers

 Annual Direct Costs: $237,257.

 Total Direct Costs: $1,189,643.

9/1/16 – 8/31/2021 9R01AR062908 (MPI Enomoto-Iwamoto, 7%)

 NIH/NIAMS

 Mechanisms of Synovial Joint Formation

 Annual Direct Costs: $253,459.

 Total Direct Costs: $1,264,865.

3/1/18 – 1/31/2020 R21 AR071623-01A1 (Co-I 4.4%, PI Zhang)

 NIH/NIAMS

Adam8 In Intervertebral Disc Degeneration

Annual Direct Costs: $114,712.

**Pending Grants**

1R02AR073181 (Enomoto-iwamoto, 20%), 6% scored

 NIH/NIAMS

 Development of Pharmacological Treatment of Osteochondromas

 Annual Direct Costs: $225,000 (requested)

 Total Direct Costs: $1,125,000 (requested)

**Completed Grants**

4/1/04 – 9/30/10 5R01 AR050507-05 (Enomoto-Iwamoto PI 20%)

 NIH/NIAMS

 WNT/Beta-catenin Signaling in Endochondral Ossification

 Annual Direct Costs: $164,542.

2/1/05 – 1/31/11 5 R01 AR051007-05 (Iwamoto PI 10%)

 NIH/NIAMS

 Rimx2 and PPAR-gamma in Chondrocyte Function

 Annual Direct Costs: $183,958

 To analyze function of Runxs2 and PPAR-gamma in cultured

 chondrocytes.

7/1/05 – 5/31/11 5 RO1 AG025868-05 (Pacifici PI, Enomoto-Iwamoto CoPI 25%)

 NIH/NIA

 Mechanisms of Synovial Joint Formation

 Annual Direct Costs: $288,141.

2/1/07 – 1/31/12 W81XWH-07-1-0212 (Pacifici PI, Enomoto-Iwamoto Co PI 10%)

 U.S. Army Medical Research Acquisition Activity

 Mechanisms of Heterotopic Ossification and Characterization

 Of Preventive Therapeutics

 Annual Direct Costs: $353,995.

 Analysis of actions of retinoid agonists in the HO in vivo model.

9/24/09 – 9/23/10 3 Ro1 AR050507-05S1 (Enomoto-Iwamoto 20%)

 NIH/NIAMS

 WNT/Beta-catenin Signaling in Endochondral Ossification

 Total Direct Costs: $125,000.

1/1/11 – 3/31/16 RO1AR056837 (Iwamoto/Pacifici MPI, Enomoto-Iwamoto CO PI 10%)

 NIH/NIAMS

 Regulation of Skeletal Growth by Nuclear Retinoid Receptors

 Annual Direct Costs: $188,615.

 Total Direct Costs: $823,633.

 To analyze histological and molecular biological features iin

 mutant mice.

7/1/11 - 6/30/12 Foerderer Award (Enomoto-Iwamoto PI 5%)

 The Children’s Hospital of Philadelphia

 Loss of Beta-catenin in cartilage tumor

 Total Direct Costs: $47,500.

7/1/11 – 6/30/16 1R01AR061758-01 (Kayama/Pacifici, MPI, Enomoto-Iwamoto

 (Co PI 20%)

 NIH/NIAMS

Pathogenic Mechanism in Hereditary Multiple Exostoses

Syndrome

Annual Direct Costs: $311,776.

Total Direct Costs: $1,520,479.

Analysis of histological and molecular biological features of

exostosis in the exostosis animal models.

7/19/11 – 6/30/12 2P30AR050950-06 (Soslowky PI, Enomoto-Iwamoto, Co-1)

 (PI for the Pilot Grant 0%)

 NIH/NIAMS Pilot Grant

 Tendon Repair by Retinoic Acid Receptor Agonists

 Total Direct Costs: $30,000.

7/1/13 – 6/30/16 R21AR062193 (Enomoto-Iwamoto, PI 20%)

 NIH/N*AMS*

Stimulation of Tendon Repair by Retinoid Nuclear Receptor

 Agonists

 Annual Direct Costs: $ 110,990.

 Total Direct Costs: $243,100.

7/1/14 – 6/30/16 Enomoto-Iwamoto PI 5%)

 Arthritis Foundation IRG (6389)

 Protection of Articular Cartilage by Blocking Alpha 5 Integrin

 Annual Direct Costs: $92,593.

 Total Direct Costs: $185,186.

**Publications**

**Peer-reviewed journal articles**

1. Matusi SO, Morisawa S, Takigawa M, **Enomoto M**, Suzuki F. *Induction of ornithine decaoxylase and spermidine/spermine N1-acetyltransferase by parathyroid hormone* *in rabbit costal chondrocytes in culture.* J Biochem (Tokyo) 97, 387-390. 1985.
2. Takigawa M, Shirai E, **Enomoto M,** Hiraki Y, Fukuya M, Suzuki F, Shiio T, Yugari Y. *Cartilage-derived anti-tumor factor (CATF) inhibits the proliferation of endothelial cells in culture.* Cell Biol. Int. Rep., 9, 619-625. 1985.
3. Fukuo K, Takigawa M, Tajima K, **Enomoto M,** Kumahara Y, Suzuki F. *Comparison of inhibition by a tumor promoter (12-O-tetradecanoylphorbol-13-acetate) of expression of the differentiated phenotype of chondrocytes in rabbit coastal chondrocytes in culture with inhibition by retinoic acid.* J Biochem (Tokyo) 99, 385-396. 1986.
4. Takigawa M, Shirai E, **Enomoto M,** Pan HO, Suzuki F, Shiio T, Yugari Y.  *A factor in conditioned medium of rabbit coastal chondrocyte inhibits the proliferation of cultured endothelial cells and angiogenesis induced by B16 melanoma: Its relation with cartilage-derived anti-tumor factor (CATF).* Biochem. Int., 14, 357-363. 1987.
5. Takigawa M, **Enomoto M,** Shirai E, Nishii Y, Suzuki F. *Differential effects of 1a, 25-dihydroxycholecalciferol on the proliferation and the differentiated phenotype of rabbit costal chondrocytes in culture.* Endocrinology, 122, 831-839. 1988.
6. Takigawa M, Shiral E, **Enomoto M,** Hiraki Y, Suzuki F, Siio T, Yugari Y. *cartilage-derived anti-tumor factor (CATF): Partial purification and correlation of inhibitory activity against tumor growth with anti-angiogenic activity.* J Bone Mineral. Metab. 6, 29-38. 1988
7. Takigawa M, Shirai E, **Enomoto M,** Kinoshita A, Pan HO, Suzuki F, Yugari Y. *Establishment from mouse growth cartilage of clonal cell lines with osteoblastic phenotypes and ability to produce an endothelial cell growth inhibitor.* Calcified. Tissue Int. 45, 305-313. 1989.
8. **Enomoto M,** Kinoshita A, Pan HO, Suzuki F, Yamamoto I, Takigawa M.  *Demonstration of receptors for parathyroid hormone on cultured rabbit costal chondrocytes.* Biochem. Biophys. Res. Commun. 162, 1222-1229. 1989.
9. Takigawa M, Tajima K, Pan HO, **Enomoto M,** Kinoshita A, Suzuki F, Takano Y, Mori Y. *Establishment of a clonal human chondrosarcoma cell line with cartilage phenotypes.* Cancer Res. 49, 3396-4002. 1989
10. **Enomoto M,** Pan HO, Suzuki F, Takigawa M. *Physiological role of vitamin A in growth cartilage cells: Low concentrations of retinoic acid strongly promote the proliferation of rabbit costal growth cartilage cells in culture.* J Biochem. (Tokyo) 107, 743-748. 1990.
11. **Enomoto M,** Pan HO, Kinoshita A, Yutani Y, Suzuki F, Takigawa M. *Effects of tumor necrosis factor on proliferation and expression of differentiated phenotypes in rabbit costal chondrocytes in culture.* Calcif.Tissue int. 47, 145-151. 1990.
12. Takigawa M, Pan HO, **Enomoto M,** Kinoshita A, Nishida Y, Suzuki F, Tajima K. *A clonal human chondrosarcoma cell line produces an anti-angiogenic antitumor factor.* Anticancer Res. 10, 311-316. 1990.
13. Takigawa M, **Enomoto M,** Nishida Y, Pan HO, Kinoshita A, Suzuki F. *Tumor angiogenesis and polyamines: a-difluoromethylornithine, and irreversible inhibitor of ornithine decarboxylase, inhibits B16 melanoma-induced angiogenesis in ovo and the proliferation of vascular endothelial cells in vitro.* Cancer Res. 50, 4131-4138. 1990.
14. Takigawa M, Kinoshita A, **Enomoto M,** Asada A, Suzuki F. *Effects of various growth and differentiation factors on expression of parathyroid hormone receptors on rabbit chondrocytes in culture.* Endocrinology 129, 868-876. 1991.
15. Leboy PS, Menko AS, Boettiger D, **Enomoto M.** *Ascorbic acid induction of chondrocyte maturation.* Bone and Mineral, 17, 242-246. 1992.
16. **Enomoto M,** Boettiger, Menko AS. *A5 Integrin is a critical component of adhesion plaques in myogenesis.* Dev. Biol. 155, 180-197. 1993.
17. **Enomoto M,** Leboy PS, Menko AS, Boettiger D. *b1 integrins mediate the interaction with type 1 collagen, type II collagen and fibronectin in chondrocytes.* Exp. Cell Res. 205, 276-285. 1993.
18. **Enomoto-Iwamoto M,** Menko AS, Philip N, Boettiger D. *Evaluation of integrin molecules involved in substrate adhesion.* Cell Adhesion and Commun. 1, 191-202. 1993.
19. Iwamoto M**,** Jikko A, Murakami H, Shimazu A, Nakashima K, **Iwamoto M,** Takigawa M, Baba H, Suzucki F, Kato Y. *Changes in parathyroid hormone receptors during chondrocyte cytodifferentation.* J Biol. Chem. 289, 1-7. 1994.
20. Takebayashi T, Iwamoto M, Jikko A, Matsumura T, **Enomoto-Iwamoto M,** Myoukai F, Koyama E, Yamaai T, Matsumoto K, Nakamura T, Kurisu K, Noji S. *Hepatocyte growth* *factor/scatter factor modulates cell motility, proliferation, and proteoglycan synthesis of chondrocytes.* J Cell Biol. 129, 1411-1419. 1995.
21. Boettiger D, **Enomoto-Iwamoto M,** Yoon H, Hofer U, Menko AS, Chiquet-Ehrismann R. *Regulation of a5b1 integrin affinity during myogenic differentiation.* Dev. Biol. 169, 261-272. 1995.
22. Kawakami Y, Ishikawa T, Shimbara M, Tanda N, **Enomoto-Iwamoto M,** Iwamoto M, Kuwana T, Noji S, Nohno T. *BMP signaling during bone patter determination in the developing limb.* Development 122, 3557-3566. 1996.
23. Kinto N, Iwamoto M, **Enomoto-Iwamoto M,** Nojii S, Ohuchi H, Yoshioka H, Kataoka H, Wada Y, Yuhao G, Takahashi HE, Yoshiki S, Yamaguchi A. *Fibroblasts expression Sonic Hedgehog induce osteoblast differentiation and ectopic bone formation.* FEBS Lett. 404, 319-323. 1997.
24. **Enomoto-Iwamoto M,** Iwamoto M, Nakashima K, Mukudai Y, Boettiger D, Pacifici M, Kurisu K, Suzuki F. *Involvement of a5b1 integrin in matrix interactions and proliferation* *of chondrocytes*. J Bone Miner. Res 12, 1124-1132. 1997.
25. Nakamura T, Aikawa T, **Enomoto-Iwamoto M,** Iwamoto M, Higuchi Y, Pacifici M, Kinto N, Yamaguchi A, Noji S, Kurisu K, Matsuya T. *Induction of osteogenic differentiation by hedgehog proteins.* Biochem. Biophys. Res. Commun. 237, 465-469. 1997.
26. **Enomoto-Iwamoto M,** Iwamoto M, Mukudai Y, Kawakami Y, Nohno T, Higuchi Y, Takemoto S, Ohuchi H, Noji S, Kurisu K. *Bone Morphogenetic Protein Signaling is Required for Maintenance of Differentiated Phenotype, Control of Proliferation and Hypertrophy in Chondrocytes.* J Cell Biol. 140, 409-418. 1998
27. Jikko A, Yamashita K, Iwamoto M, Hiranuma H, Takebayashi T, Maeda T, Sakuda M, Matusmoto K, Nakamura T, **Enomoto-Iwamoto M,** Tabata MJ, Fuchihata H, Kurisu K. *The role of hepatocyte growth factor in growth plate cartilage.* J Bone Miner. Metab. 16, 170-177. 1998.
28. Imanaka-Yoshida K, **Enomoto-Iwamoto M,** Yoshida T, Sakakura T. *Viculin, talin, integrin a6b1 and laminin can serve as components of attachment complex mediating contraction force transmission from cardiomyocytes to extracellular matrix.* Cell Motil Cytoskel. 42, 1-11. 1999.
29. Enomoto H, **Enomoto-Iwamoto M,** Iwamoto M, Takemoto S, Himeno M, Nomura S, Kitamura Y, Kishimoto T, Komori T. *Cbfa-1 is a positive regulatory factor in chondrocyte maturation.* J Biol. Chem. 275, 8695-8702. 2000.
30. Yagami K, Suh JY, **Enomoto-Iwamoto M,** Koyama E, Shapiro IM, Pacifici M, Iwamoto M. *Matrix GLA protein is a developmental regulator of chondrocyte mineralization and, when constitutively expressed, blocks endochondral and intramembranous ossification in the limb.* J Cell Biol. 147, 1097-1108. 1999.
31. Iwamoto M, Higuchi Y, Koyama E, **Enomoto-Iwamoto M,** Kurisu K, Yeh H, Abrams WR, Rosenbloom J, Pacifici M. *Transcription factor ERG variants and functional diversification of chondrocytes during the limb long bone development.* J Cell Biol. 2000 July 10;150(1):27-40.
32. **Enomoto-Iwamoto M,** Nakamura T, Aikawa T, Higuchi Y, uasa T, Yamaguchi A, Nohno T, Noji S, Matsuya T, Kurisu K, Koyama E, Pacifici M, Iwamoto M. *Hedgehog proteins stimulate chondrogenic cell differentiation and cartilage formation.* J Bone Miner Res. 2000 Sep;15(9):1659-68.
33. Ueta C, Iwamoto M, Kantani N, Yoshiada C, Liu Y, **Enomoto-Iwamoto M,** Ohmori T, Enomoto H, Nakata K, Takada K, Kurisu K, Komori T. *Skeletal malformations caused by overexpression of Cbfa1 or its dominant negative form in chondrocytes.* J Cell Biol. 2001; 153,87-99.
34. **Enomoto-Iwamoto M,** Enomoto Y, Komori T, Iwamoto M. *Participation of cbfa 1 in regulation of chondrocyte differentiation.* Osteoarthritis & Cartilage 2001;9,576-584.
35. Iwamoto M, Higuchi Y, **Enomoto-Iwamoto M,** Kurisu K, Koyama E, Yeh H, Rosenbloom J, Pacifici M. *The role of erg (ets related gene) in cartilage development.* Osteoarthritis & Cartilage 2001;9,541-547.
36. **Enomoto-Iwamoto M,** Kitagaki J, Koyama E, Tamamura Y, Wu C, Kanatani N, Koike T, Okada H, Kmori T, Yoneda T, Church V, Francis-West P, Kurisu K, Nohno T, Pacifici M, Iwamoto M. *The wnt antagonist Frzb-1 regulates chondrocyte maturation and long bone development during limb skeletogenesis.* Dev. Biol. 2002; 251,142-156.
37. Yuasa T, Kataoka H, Kinto N, Iwamoto M, **Enomoto-Iwamoto M,** Lemura S, Ueno NM, Shibata Y, Kurosawa H, Yamaguchi A. *Sonic hedgehog id involved in osteoblast differentiation by cooperating with BMP-2.* J Cell Physiol. 2002;193,225-32.
38. Iwamoto M, Kitagaki J, Tamamura Y, Gentili C, Koyama E, Enomoto H, Komori T, Pacifici M, **Enomoto-Iwamoto M.** *Runx 2 expression and action in chondrocytes are regulated by retinoid signaling and parathyroid hormone-related peptide (PTHrP).* Osteoarthritis and Cartilage 2003;11,6-15.
39. Kitagaki J, Iwamoto M, Liu L-G, Tamamura Y, Pacifici M, **Enomoto-Iwamoto M.** *Activation of beta-catenin-LEF/TCF signal pathway in chondrocytes stimulates ectopic endochondral ossification.* Osteoarthritis and Cartilage 2003:11, 36-43. PMID: 12505485,PMC 12505485
40. Enomoto H, Furuichi T, Zamma A, Yamada K, Yoshida C, Sumitani S, Yamamoto H, **Enomoto-Iwamoto M,** Iwamoto M, Komori T. *Runx2 deficiency in chondrocytes cause adipogenic changes in vitro.* J Cell Sci. 2004:117, 417-425.
41. Iwamoto M, Koyama E. **Enomoto-Iwamoto M,** Pacifici M. *The balancing act of transcription factors C-1-1 and Runx2 in articular cartilage development.* Biochem. Biophys. Res. Commun. 2005:328, 777-782.
42. Tamamura Y, Otani T, Kanatani N, Koyama E, Kitagaki J, Komori T, Yamada Y, Constantini F, Wakisaka S, Pacifici M. Iwamoto M, **Enomoto-Iwamoto M.** Developmental regulation of Wnt/beta-catenin signal is required for growth plate assembly, cartilage integrity, and endochondral ossification. J Biol.Chem. 2005: 280, 19185-95.
43. Pacifici M, Koyama E, Shibukawa Y, Wu C, Tamamura T, **Enomoto-Iwamoto M,** Iwamoto M. *Cellular and molecular mechanisms of synovial joint and articular cartilage formation.* Ann NY Acad Sci 2006:1068, 74-86.
44. Young B, Minugh-Purvis N, Shimo T, St. Jacques B, Iwamoto M, **Enomoto-Iwamoto M,** Koyama E, Pacifici M. *Indican and sonic hedgehogs regulate synchondrosis growth plate and cranial base development and function.* Dev. Biol. 2006:229,272-282.
45. Koyoma E, Nagayama M, Shibukawa Y, **Enomoto-Iwamoto M,** Iwamoto M, Maeda T, Lanske B, Song B, Serra R, Pacifici M. *Conditional Kif3a ablation causes abnormal hedgehog signaling topography, growth plate dysfunction, and excessive bone cartilage formation during skeletogenesis.* Development 2007:134,2159-69.
46. Iwamoto M, Tamamura Y, Koyama E, Komori T, Takeshita N, Williams JA, Nakamura T, **Enomoto-Iwamoto M,** Pacifici M. *Transcription factor ERG and joint and articular cartilage formation during mouse limb and spine skeletogenesis.* Dev. Biol 2007:305,40-51.
47. Dong YF, Soung DY, Chang Y, **Enomoto-Iwamoto M,** Paris M, O’Keefe RJ, Schwarz EM, Drissi H. *TGF-b and Wnt signals stage-specifically regulate chondrocyte differentiation through Twist1.* Mol Endrocrinol 2007:21,2805-20.
48. Koyama E, Oshiai T, Rountree RB, Kingsley DM, **Enomoto-Iwamoto M,** Iwamoto M, Pacifici M. *Synovial joint formation during mouse limb skeletogenesis: Roles of Indian Hedgehog Signaling.* Ann NY Acad Sci. 2007:1116,100-12.
49. Yuasa T, Otani T, Koike T, Iwamoto M, **Enomoto-Iwamoto M.** *Wnt/beat-catenin signaling stimulates matrix catabolic genes and activity in articular chondrocytes: its possible role in joint degeneration.* Lab Invest 2008,264-74. PMID:18227807.
50. Nagayama M, Iwamoto M, Hargett A, Kamiya N, Tamamura Y, Young B, Morrison T, Takeuchi H, Pacifici M, **Enomoto-Iwamoto M,** Koyama E. *Wnt/beta-catenin signaling regulates cranial base development and growth.* J Dent Res 2008:87,244-9.
51. Koyama E, Shibukawa Y, Nagayama M, Sugito H, Young B, Yuasa T, Okabe T, Ochiai T, Kamiya N, Rountree RB, Kingsley DM, Iwamoto M, **Enomoto-Iwamoto M,** Pacifici M. *A distinct cohort of progenitor cells participates in synovial joint and articular cartilage formation during mouse limb skeletogenesis.* Dev. Biol 2008:316,62-73.
52. Kerr BA, Otani T, Koyama E, Freeman TA, **Enomoto-Iwamoto M.** *Small GTPase protein Rac-1 is activated with maturation and regulates cell morphology and function in chondrocytes.* Exp Cell Res 2008:314,1301-12 PMID:PMC2288527
53. Williams JA, Kondo N Okabe T, Takeshita N, Pilchak DM, Koyama E, Ochiai T, Jensen D, Chu ML, Kane MA, Napoli JL, **Enomoto-Iwamoto M,** Ghyselinck N, Chambon P, Pacifici M, Iwamoto M. *Retinoic acid receptors re required for skeletal growth, matrix homeostasis and growth plate function in postnatal mouse.* Dev. Biol. 2009:328,315-27.
54. Yuasa T, Kondo N, Yasuhara R, Shimono K, Mackem S, Pacifici M, Iwamoto M, **Enomoto-Iwamoto M.** *Transient Activation of Wnt/b-catenin Signaling Induces Abnormal Growth Plate Closure and Articular Cartilage Thickening in Postnatal Mice.* Am. J. Pathol. 2009:175,1993-2003. PMDI: PMC2774063.
55. Yasuhara R, Yuasa T, Williams JA, Byers SW, Shah S, Pacifici M, Iwamoto M, **Enomoto-Iwamoto M.** *Wnt/beta-catenin and retinoic acid receptor signaling pathways interact to regulate chondrocytes function and matrix turnover.* J. Biol. Chem. 2010:285,317-27. PMID: PMC2804179.
56. Williams JA, Kane M, Okabe T, **Enomoto-Iwamoto M,** Napoli JL, Pacifici M, Iwamoto M. *Endogenous retinoids in mammalian growth plate cartilage: analysis and roles in matrix homeostasis and turnover.* J Biol. Chem. 2010.
57. Shimono K, Tung WE, Macolino C, Chi AH, Didizian JH, Mundy C, Chandraratna RA, Mishina Y, **Enomoto-Iwamoto M,** Pacifici M, Iwamoto M. *Potent inhibition of heterotopic ossification by nuclear retinoic acid receptor-y agonists.* Nat Med. 2011:Apr;17(4):454-60. PMID: 21460849.
58. Kondo N, Yuasa T, Shimono K, Tung W, Okabe T, Yasuhara R, Pacifici M, Zhang Y, Iwamoto M, **Enomoto-Iwamoto M.** *Intervertebral Disc Development is Regulated y Wnt/β-catenin Signaling.* Spine 2011 Apr 15;36(8):E513-518. PMC3072453.
59. Mundy C, Yasuda T, Kinumatsu T, Yamaguchi Y, Iwamoto M, **Enomoto-Iwamoto M,** Koyama E, Pacifici M. *Synovial joint formation requires local Ext1 expression and heparin sulfate production in developing mouse embryo limbs and spine.* Dev. Biol. 2001 Mar 1:351(1):70-81. PMCID:PMC303.
60. Zhang X, Siclari VA, Lan S, Zhu J, Koyama E, Dupuis HL, **Enomoto-Iwamoto M,** Beier F, Qin L. *The critical role of the epidermal growth factor receptor in endochondral ossification.* J Bone Miner Res. 2011 Nov;26(11):2623-33. PMID: 21887704.
61. Yasuhara R, Ohta Y, Yuasa T, Kondo N, Hoang T, Addya S, Fortina P, Pacifici M, Iwamoto M, **Enomoto-Iwamoto M.** *Roles of β-catenin signaling in phenotypic expression and proliferation of articular cartilage superficial zone cells.* Lab Invest. 2011 Dec;91(12):1739-52. PMID:21968810.
62. Cantley L, Saunders C, Guttenberg M, Candela ME, Ohta Y, Yasuhara R, Kondo N, Sgariglia F, Asai S, Zhang X, Qin L, Hecht JT, Chen D, Yamamoto M, Toyosawa S, Dormans JP, Esko JD, Yamaguchi Y, Iwamoto M. Pacifici M, **Enomoto-Iwamoto M.** *Loss of β-Catenin Induces Multifocal Periosteal Chondroma-Like Masses in Mice.* Am J Pathol. 2013 Mar;182(3):917-27. PMID: 23274133.
63. Anderson DG, Markova D, An HS, Chee A, **Enomoto-Iwamoto M,** Markov V, Saitta B, Shi P, Gupta C, Zhang Y. *Human umbilical cord blood-derived mesenchymal stem cells in the cultured rabbit intervertebral disc: a novel cell source for disc repair.* Am J Phys Med Rehabil. 2013 May;92(5):420-9.
64. Huegel J, Sgariglia F, **Enomoto-Iwamoto M,** Koyoma E, Dormans JP, Pacifici M. *Heparan sulfate in skeletal development, growth and pathology: The case of heredity multiple exostoses.* Dev. Dyn. 2013 Jul 2.
65. Sgariglia F, Candela ME, Huegel J, Jacenko O, Koyama E, Yamaguchi Y, Pacifici M, **Enomoto-Iwamoto M.** *Epiphyseal abnormalities, trabecular bone loss and articular chondrocyte hypertrophy develop in the long bones of postnatal Ext1-deficient mice.* Bone 2013 ug 17;57(1):220-231.PMID: 23958822.
66. Zhang X, Zhu JI, Yumei Li, Siclari VA, Lin T, Chandra A, Elena CM, Koyama E, **Enomoto-Iwamoto M,** Ling QJ. *Epidermal growth factor receptor (EGFR) signaling regulates epiphyseal cartilage development through β-catenin-dependent and independent pathways.* Biol. Chem. 2013 Nov 8;288(45):32229-40. PMID: 24047892.
67. Candela ME, Cantley L, Yasuaha R, Iwamoto M, Pacifici M, **Enomoto-Iwamoto M.** *Distribution of Slow-Cycling Cells in Epiphyseal Cartilage and Requirement of β-Catenin Signaling for Their Maintenance in Growth Plate.* J Orthop. Res. 2014 May;32(5):661-8. PMID: 214415663.
68. Asai S, Otsuru S, Candela ME, Cantely L, Uchibe K, Hofmann TJ, Zhang K, Wapner KL, Soslowsky L, Horwitz EM, **Enomoto-Iwamoto M.** *Tendon Progenitor cells in injured tendons have a strong chondrogenic potential: The CD105-negative subpopulation induces chondrogenic degeneration.* Stem Cells 2014 Dec;32(12):3266-77. doi:10.1002/stem.1847. PMID:25220576, PMCID: PMC4245375.
69. Zhang X, Zhu J, Liu F, Lo Y, Chandra A, Levin LS, Beier F, **Enomoto-Iwamoto M,** Qui L. *Reduced EGFR signaling enhances cartilage destruction in a mouse osteoarthritis model.* Bone Research 2, 14015. 2014.
70. Sgariglia F, Pedrini E, Bradfield JP, Bhatti TR, D’Adamo P, Dormans JP, Gunawardena AT, Hakonarson H, Hecht JT, Sangiorgi L, Pacifici M, **Enomoto-Iwamoto M,** Grant SF. *The type 2 diabetes associated rs7903146 allele within TCF7L2 is significantly under-represented in Heredity Multiple Exostoses: Insights into pathogenesis.* Bone 2014 Dec 9;72C:123-127. PMID:25498973, PMC3400120.
71. Decker RS, Koyama E, **Enomoto-Iwamoto M,** Maye P, Rowe D, Zhu S, Schultz PG, Pacifici M. *Mouse limb skeletal growth and synovial joint development are coordinately enhanced by Kartogenin.* Dev. Biol. 2014 Nov 15;395(2):255-67. PMID:25238962.
72. Huegel J, **Enomoto-Iwamoto M,** Sgariglia F, Koyama E, Pacifici M. *Heparanase stimulates chondrogenesis and is up-regulated in human ectopic cartilage: a mechanism possibly involved in heredity multiple exostoses.* Am J Pathol. 2015 Jun;185(6):1676-85.
73. Zhang KI, Asai S, Yu B, **Enomoto-Iwamoto M.** *IL-1β irreversibly inhibits tenogenic differentiation and alters metabolism in injured tendon-derived progenitor cells in vitro.* Biochem Biophys Res Commun. 2015 Aug 7;463(4):667-72 doi:10.1016/j.bbrc.015.05.122 PMID:26081275 PMC4496264.
74. Ohta Y, Okabe T, Lamour C, DiRocco A, Maijenburg M, Phillips A, Speck NA, Wakitani S, Nakamura T, Yamada Y, **Enomoto-Iwamoto M,** Pacifici M, Iwamoto M,. *Articular cartilage endurance and resistance to osteoarthritic changes require transcription factor Erg.* Arthritis Rheumatol. 2015 Jun 19. doi:10.1002/art.39243 [Epub ahead of print] PMID:26097038 PMCID:2104487.
75. Zhang K, Asai S, Hast MW, Liu M, Usami Y, Iwamoto M, Soslowsky LJ, **Enomoto-Iwamoto M.** *Tendon Mineralization is Progressive and Associated with Deterioration of Tendon Biomechanical Properties, and Requires BMP-Smad Signaling in the Mouse Achilles Tendon Injury.* Matrix Biol. 2016 Jan 26. PMID:26825318, NIHMSID:756672.
76. Candela ME, Wang C, Gunawardena AT, hang K, Cantley L, Yasuhara R, Usami Y, Francois N, Iwamoto M, van der Flier A, hang Y, Qin L, Han L, **Enomoto-Iwamoto M.** *Alpha 5 Integrin Mediates Osteoarthritic Changes in Mouse Knee Joints.* PlosOne. 2016 June 9;11(6):e0156783. doi:10.1371/journal.pone.0156783. eCollection 2016. PMID:27280771, PMCID:PMC4900574.
77. Uchibe K, Son J, Larmour C, Pacifici M, **Enomoto-Iwamoto M.** *Genetic and pharmacological inhibition of retinoic acid receptor y function promotes endochondral bone formation.* J. Orthop Res. 2016 Jun21. doi:10.1002/jor.23347. [Epub ahead of print] PMID: 27325507.
78. Doyran B, Tong W, Li Q, Jia H, hang X, Chen C, **Enomoto-Iwamoto M,** Lu XL, Qin L, Han L. *Nanoindentation Modulus of Murine Cartilage: A Sensitive Indicator of the Initiation and Progression of Post-Traumatic Osteoarthritis.* Osteoarthritis Cartilage. 2016 Aug 25. pii:S1063-4584(16)30243-6. doi:10.1016/j.joca.2016.08.008. [Epub ahead of print] PMID:27568574.
79. Jia H, Ma X, Tong W, Doyran B, Sun Z, Wang L, Zhang X, Zhou Y, Badar F, Chandra A, Lu XL, Xia Y, Han L, **Enomoto-Iwamoto M,** Qin L. *EGFR signaling is critical for maintaining the superficial layer of articular cartilage and preventing osteoarthritis initiation.* Proc Natl Acad Sci USA, 2016 Dec 13;113(50):14360-14365. PMID: 27911782.
80. Uchibe K, Son J, Larmour C, Pacifici M, **Enomoto-Iwamoto M,** Iwamoto M. *Genetic and pharmacological inhibition of retinoic acid receptor γ function promotes endochondral bone formation.* J of Orhop Research, 2017;35(5):1096-1105. PMID: 27325507.
81. Decker RS, Um HB, Dyment NA, Cottingham N, Usami Y, **Enomoto-Iwamoto M,** Kronenberg MS, Maye P, Rowe DW, Koyama E, Pacifici M. *Cell origin, volume and arrangement are drivers of articular cartilage formation, morphogenesis and response to injury in mouse limbs.* Developmental Biology, 2017. PMID: 28438606.
82. Tong W, Lu Z, Qin L, Mauck RL, Smith HE, Smith LJ, Malhotra NR, Heyworth MF, Caldera F, **Enomoto-Iwamoto M,** Zhang Y. *Cell therapy for the degenerating disc.*  Translational research*.* J of Laboratory and Clinical Medicine, 2017; 181:49-58. PMID: 27986604.
83. Doyran B, Tong W, Li Q, Jia H, Zhang X, Chen C, **Enomoto-Iwamoto M,** Lu XL, Qin L, Han L. *Nanoindentation modulus of murine cartilage: a sensitive indicator of the initiation and progression of post-traumatic osteoarthritis.* Osteoarthritis and Cartilage, 2017;25(1):108-117. PMCID: PMC5182132.
84. Jia H, Ma X, Wei Y, Tong W, Tower RJ, Chandra A, Wang L, Sun Z, Yang Z, Badar F, Zhang K, Tseng WJ, Kramer I, Kneissel M, Xia Y, Liu XS, Wang JHC, Han L, **Enomoto-Iwamoto M,** Qin L. *Loading-induced Reduction in Sclerostin as a Mechanism of Subchondral Bone Plate Sclerosis in Mouse Knee Joints During Late-Stage Osteoarthritis.* Arthritis Rheumatol, 2018 Feb;70(2):230-241. PMID: 29024567.
85. Tian Z, Ma X, Yasen M, Mauck RL, Qin L, Shofer FS, Smith LJ, Pacifici M, **Enomoto-Iwamoto M,** Zhang Y. *Intervertebral Disc Degeneration in a Percutaneous Mouse Tail Injury Model.* Phys Med Rahabil 2018 Mar;97(3):170-177. PMID: 28863006.
86. Zhang K, Hast MW, Izumi S, Usami Y, Shetye S, Akabudike N, Philip NJ, Iwamoto M, Nissim I, Soslowsky LJ, **Enomoto-Iwamoto M.** *Changes in Glucose Metabolism and Lactate Synthesis in Mouse Injured Tendons: Treatment with Dichloroacetate, A Lactate Synthesis Inhibitor, Improves Tendon Healing.* Am Sports J Med. 2018 Jul;46(9):2222-2231. PMID: 29927623. PMC6510478
87. Zhang Y, Tian Z, Ashley JW, Wang L, Tower RJ, Wei Y, Qin L, Yang S, **Enomoto-Iwamoto M**. *Extracellular Matrix and Adhesion Molecule Gene Expression in the Normal and Injured Murine Intervertebral Disc.* Am J Phys Med Rehabil. 2019 Jan;98(1):35-422018 Aug 6. PMID: 30085932. PMC6422258
88. Usami U, Gunawardena AT, Francois NB, Otsuru S, Takano H, Hirose K, Matsuoka M, Suzuki A, Huang J, Qin L, Iwamoto M, Yang W, Toyosawa S and **Enomoto-Iwamoto M**.

*Possible Contribution of Wnt-responsive Chondroprogenitors to The Postnatal Murine Growth Plate.* J Bone Miner Res. 2019 May;34(5):964-974. PMID: 30602070. PMC6536347

89. Tong W, Tower RJ, Chen C, Wang L, Zhong L, Wei Y, Sun H, Cao G, Jia H, Pacifici M, Koyama E, Enomoto-Iwamoto M, Qin L. *Periarticular Mesenchymal Progenitors Initiate and Contribute to Secondary Ossification Center Formation During Mouse Long Bone Development.* Stem Cells. 2019 May;37(5):677-689. PMID: 30681752

90. Scheiber AL, Guess AJ, Kaito T, Abzug JM, Enomoto-Iwamoto M, Leikin S, Iwamoto M, Otsuru S. *Endoplasmic reticulum stress is induced in growth plate hypertrophic chondrocytes in G610C mouse model of osteogenesis imperfecta.* Biochem Biophys Res Commun. 2019 Jan 29;509(1):235-240. doi: 10.1016/j.bbrc.2018.12.111. Epub 2018 Dec 20. PMID: 30579604

91. Izumi S, Otsuru S, Adachi N, Akabudike N, Enomoto-Iwamoto M. *Control of glucose metabolism is important in tenogenic differentiation of progenitors derived from human injured tendons.* PLoS One. 2019 Mar 18;14(3):e0213912. doi: 10.1371/journal.pone.0213912. eCollection 2019. PMID: 30883580. PMC6422258

92. Wang C, Brisson BK, Terajima M, Li Q, Hoxha K, Han B, Goldberg AM, Sherry Liu X, Marcolongo MS, Enomoto-Iwamoto M, Yamauchi M, Volk SW, Han L. Type III collagen is a key regulator of the collagen fibrillar structure and biomechanics of articular cartilage and meniscus. Matrix Biol. 2019 Oct 23. pii: S0945-053X(19)30373-7. doi: 10.1016/j.matbio.2019.10.001. PMID: 31655293

93. Han B, Li Q, Wang C, Patel P, Adams SM, Doyran B, Nia HT, Oftadeh R, Zhou S, Li CY, Liu XS, Lu XL, Enomoto-Iwamoto M, Qin L, Mauck RL, Iozzo RV, Birk DE, Han L. Decorin Regulates the Aggrecan Network Integrity and Biomechanical Functions of Cartilage Extracellular Matrix. ACS Nano. 2019 Oct 22;13(10):11320-11333. doi: 10.1021/acsnano.9b04477. Epub 2019 Oct 1. PMID: 31550133

94. Shield WP 3rd, Cellini A, Tian H, Wilson K, Dan Y, Abzug JM, Garcia S, Moritani N, Alferiev I, Chorny M, Takigawa M, Ng VY, Iwamoto M, Enomoto-Iwamoto M. Selective Agonists of Nuclear Retinoic Acid Receptor Gamma Inhibit Growth of HCS-2/8 Chondrosarcoma Cells. J Orthop Res. 2020 May;38(5):1045-1051PMID: 31808569

95. Decorin Mediates Cartilage Matrix Degeneration and Fibrillation in Post-Traumatic Osteoarthritis. Li Q, Han B, Wang C, Tong W, Wei Y, Tseng WJ, Han LH, Liu XS, Enomoto-Iwamoto M, Mauck RL, Qin L, Iozzo RV, Birk DE, Han L. Arthritis Rheumatol. 2020 Mar 12. doi: 10.1002/art.41254. [Epub ahead of print] PMID: 32162789

96. Influence of Genetic Background and Sex on Gene Expression in the Mouse (Mus musculus) Tail in a Model of Intervertebral Disc Injury. Brent JM, Tian Z, Shofer FS, Martin JT, Yao L, Archete C, Chen YH, Qin L, Enomoto-Iwamoto M, Zhang Y. Comp Med. 2020 Mar 10. doi: 10.30802/AALAS-CM-19-000034. [Epub ahead of print] PMID: 32156324

97. Aalysis of Association between Morphometric Parameters of Growth Plate and Bone Growth of Tibia in Mice and Humans. Wilson K, Usami Y, Hogarth D, Scheiber AL, Tian H, Oichi T, Wei Y, Qin L, Otsuru S, Toyosawa S, Iwamoto M, Abzug JM, Enomoto-Iwamoto M. Cartilage. 2020 Jan 30, PMID: 31997656.

98. Understanding the Action of RARγ Agonists on Human Osteochondroma Explants. Garcia SA, Tian H, Imamura-Kawasawa Y, Fisher A, Cellini A, Codd C, Herzenberg JE, Abzug JM, Ng V, Iwamoto M, Enomoto-Iwamoto M. Int J Mol Sci. 2020 Apr 13;21(8). doi: 10.3390/ijms21082686. PubMed PMID: 32294904; PubMed Central PMCID: PMC7215996.

99. Chery DR, Han B, Li Q, Zhou Y, Heo SJ, Kwok B, Chandrasekaran P, Wang C, Qin L, Lu XL, Kong D, Enomoto-Iwamoto M, Mauck RL, Han L. Early changes in cartilage pericellular matrix micromechanobiology portend the onset of post-traumatic osteoarthritis. Acta Biomater. 2020 Jul 15;111:267-278. doi: 10.1016/j.actbio.2020.05.005. Epub 2020 May 16. PubMed PMID: 32428685; PMCID: PMC7321882.

**Reviews, Peer-reviewed**

1. Iwamoto M, **Enomoto-Iwamoto M,** Kurisu K. *Actions of Hedgehog Proteins on skeletal cells.* Crit. Rev. Oral. Biol. Med. (1999); 10, 477-486.
2. Pacifici M, Shimo T, Gentili C, Kirsch T, Freeman TA, **Enomoto-Iwamoto M,** Iwamoto M, Koyama E. *Syndecan-3¨A cell surface heparin sulfate proteoglycan important for chondrocyte proliferation and function in the developing limb.* J Bone. Miner. Metab. (2005) 23, 191-9.
3. **Enomoto-Iwamoto M,** Otani T, Koike T, Iwamoto M. *Wnt/beta-catenin signaling in chondrocyte function and cartilage matrix disruption.* Current Rheumatology Reviews (2006) 2, 31-38.
4. Iwamoto M, Ohta Y, Lamour C, **Enomoto-Iwamoto M.** *Towards Regeneration of Articular Cartilage.* Birth Defects Res (Part C) (2013) Sep;99(3):192-202. PMID: 25220576.
5. Candela EM, Yasuhara R, Iwamoto M, **Enomoto-Iwamoto M.** *Resident mesenchymal progenitors of articular cartilage.* Matrix Biology (2014) 39, 44-9. PMID: 25179676.
6. Usami Y, Gunawardna AF, Iwamoto M, **Enomoto-Iwamoto M.** *Wnt signaling in cartilage development and diseases: Lessons from Animal Studies.* Lab Inves. 2016 Feb;96(2):186-96. PMID: 26641070NIHMS759949.
7. Ashley JW, **Enomoto-Iwamoto M,** Smith LJ, Mauck RL, Chan D, Lee J, Heyworth MF, An H, Zhang Y. *Intervertebral Disc Development and Disease-related Genetic Polymorphism.* Genes & Diseases (2016).
8. Tong W, Lu Z, Qin L, Mauck RL, Smith HE, Smith LJ, Malhotra NR, Heyworth MF, Caldera F, **Enomoto-Iwamoto M,** Zhang Y. *Cell Therapy for the degenerating intervertebral disc.* Transl Res. 2016 Nov 28. Pii:S1931-5244(16)30403-0. Doi:10.1016/j.trsl.2016.11.008. [Epub ahead of print] PMID: 27986604.
9. Tendon and Ligament Healing and Current Approaches to Tendon and Ligament Regeneration. Leong NL, Kator JL, Clemens TL, James A, Enamoto-Iwamoto M, Jiang J. J Orthop Res. 2020 Jan;38(1):7-12. doi: 10.1002/jor.24475. Epub 2019 Sep 30. Review. PubMed PMID: 31529731; PubMed Central PMCID: PMC7307866.
10. Wnt signaling in chondroprogenitors during long bone development and growth.Oichi T, Otsuru S, Usami Y, Enomoto-Iwamoto M, Iwamoto M. Bone. 2020 Aug;137:115368. doi: 10.1016/j.bone.2020.115368. Epub 2020 May 4. Review. PubMed PMID: 32380258; PubMed Central PMCID: PMC7354209.

**Book Chapters**

1. **Enomoto M,** Takigawa M. *Regulation of Tumor Derived and Immortalized Chondrocytes.* Biological Regulation of The Chondrocytes. Edited by Adolphe, M. CRC Press, Boca Raton:321-338. 1992.
2. **Enomoto-Iwamoto M.** *Identification and isolation of integrins involved in cell adhesion.*In Methods of Investigation of extracellular matrix(ed. Hata R, Hattori S, Arai K) . PMID: Collagen Research Society, Tokyo, vol. 5, pp. 16-20. 1997.
3. **Enomoto-Iwamoto M.** *Extracellular matrix and integrins.* In Extracellular matrix (ed. Hayashi T), Aichi Press, Tokyo, pp. 188-206. 2000.
4. **Enomoto-Iwamoto M,** Koyama E, Nohno T. *Limb morphogenesis and its regulation factors.* In new bone molecular metabolism and osteoporosis (ed. Matsumoto T.) Medical View Press, Tokyo, pp. 263-276. 2001.
5. **Enomoto-Iwamoto M,** Kitagaki J, Koyama E, Tamamura Y, Kanatani N, Komori T, Nohno N, Pacifici M, Iwamoto M. *Dual roles of the Wnt antagonist, Frzb-1 in cartilage development.* The Growth Plats, edited by Shapiro, IM, Boyan B, Anderson HC. IOS Press, Amsterdam: 235-243. 2002.
6. Pacifici M, Gentili C, Yin M, Iwamoto M, **Enomoto-Iwamoto M,** Abrams WR, Koyama E. *Indian hedgehog and retinoids orchestrate multiple growth plat functions in developing long bones: The growth plate as a highly interactive structure.* The Growth Plate, edited by Shapiro, IM, Boyan, Anderson HC. IOS Press, Amsterdam 1-17. 2002.
7. Komori T, Iwamoto M, Kanatani N, Yoshida K, **Enomoto-Iwamoto M,** Ueta C. *Involvement of cbfa1 in chondrocyte differentiation, maturation, endochondral ossification, and specification of the cartilage phenotype.* The Growth Plate, edited by Shapiro IM, Boyan B, Anderson HC. IOS Press, Amsterdam 19-23. 2002.

**Major Invited Speeches**

**Local**

1. *Wnt/b-catenin signaling and chondrocyte function,* University of Pennsylvania, School of Dentistry, Philadelphia, PA. October 19, 2005.
2. *Control of glucose metabolism for tendon repair.* Drexel University, Philadelphia, PA.
3. *Lineage tracing of skeletal progenitors during postnatal growing of growth plate.*Presented at the Stem Cell Research Center Seminar, University of Maryland, Baltimore, Maryland.
4. *Glucose Metabolism and Lactate Synthesis in Injured Tendon.* Presented at Johns Hopkins University, Baltimore, MD.

**National**

1. *Wnt signaling in cartilage matrix remodeling.* Gordon Research Conferences (cartilage biology and pathology), Ventura, CA. March 4-9, 2007.
2. Wnt/b-catenin signaling in genesis and maintenance of articular cartilage. New York University School of Medicine. 2015.
3. *Beta-catenin Signaling in Cartilage*: *Its Inactivation in Osteochondromas.* UConn Health Center, New England Musculoskeletal Institute, Framington, CT. September 24, 2014.
4. *Wnt/b-Catenin Signaling in Skeletal Development.* Presented at Tufts University, Boston, MA.

**International**

1. *Wnts in joint formation and diseases.* 24th Annual Meeting of the Japanese Society for Bone and Mineral Research. Tokyo, Japan. July 6-8, 2006.
2. *Wnt signaling in cartilage matrix remodeling.* The 20th Annual Meeting of the Japanese Society of Cartilage Metabolism. Okayama, Japan. March 2-3, 2007.
3. *Wnt/β-catenin signaling in regulation of articular cartilage development and organization*. Mie University, Mie, Japan. April 2010.
4. β-*catenin signaling and osteochondromas.* Tokohu University, Sendai, Japan. March 2012.
5. *β-catenin signaling and osteochondroma.* School of Dentistry, Showa University, Tokyo, Japan. March 14, 2014.
6. *From the research of cartilage derived anti-tumor factor to the research of cartilage tumor.* Okayama University, Faculty of Dentistry, Okayama, Japan. March 15, 2014.
7. *Tendon Repair and Glucose Metabolism Japanes,* Connective Tissue Society 2017 Annual Meeting, Tsu, Japan. June 16, 2017