ANNUAL PUBLICATIONS

Department of Biochemistry

1993.1.-2000.3.

I. Staffs and Students (April, 1999)

Professor	M. Yanagishita
Associate professor	H. Shimokawa
Lecturer	T. Takagi
	S. Oida
Research Associate	
Technician	M. Suzuki
	K. A. Podyma

II. Main Research Subjects

A. Metabolism of extracellular matrix molecules
B. Biological functions of heparan sulfate proteoglycans
C. Biochemical studies on enamel proteins
D. Biochemical studies of non-collagenous dentin proteins
E. Biochemical studies of non-collagenous bone proteins
F. Biochemical studies of alkaline phosphatase in bone and teeth
G. Studies of osteogenic factors

III. Publications (January, 1993-March, 2000)

A. Original Articles

1993

1. Akao M., Sakatume M., Aoki H., Takagi T. and Sasaki S.: In vitro mineralization in bovine tooth germ cell cultured with sintered hydroxyapatite. J. Mater. Sci.: Materials in medicine 4:569- 574,1993
2. Doi, Y., Horiguchi, T., Kim, S-H., Moriwaki, Y., Wakamatsu, N., Adachi, M., Shigeta, H .Sasaki, S. and Shimokawa, H.: Immobilized DPP and Proteins Modify OCP Formation. Calcif. Tissue Int. 52:139-145,1993
3. Okamura, T., Shimokawa, H., Takagi, Y., Ono, H. and Sasaki, S.: Detection of collagenase mRNA in odontoblasts of Bovine root-resorbing tissue by in situ hybridization. Calcif. Tissue Int. 52:325-330,1993
4. Takagi T., Kobayashi K., Kobayashi J., Kino K., Nagai N. and Sasaki S.: Biochemical characterization of temporomandibular joint disc. J. Hard Tissue Biol. 2:1-5,1993
5. Hina, M. Inoue, M., Nagatuka, J., Takagi, T. and Nagai, N.: Immunohistochemical demonstration of amelogenin, type I collagen and fibronectin in human and rat tooth germs. Japanese Journal of Oral and Maxillofacial Surgery 42:659-664,1993
6. Maruoka, Y., Oida, S., Iimura, T., Nifuji, A., Tamura, M., Takeda, H., Sasaki, S. and Enomoto, S.: Cloning of human bone morphogenetic protein-2 (hBMP-2) cDNA by PCR method. Japanese Journal of Oral Biology35:64-74,1993
7. Nihuji, A., Oida, S., Tamura, M., Yamaguti, S., Takeda, H., Iwaki, H., Shimokawa, H., Sasaki, S. and Amagasa, M.: A study on growth factors regulates bone formation - Part 1- cDNA cloning of murine bone morphogenetic protein by polymerase chain reaction. Japanese Journal of Oral and Maxillofacial Surgery 39:103-109,1993
8. Takagi, T. and Aoki, H.: Mechanism of teeth and bone development in vertebrates, Bulletin of the Ceramic Society of Japan 28:22-25,1993
9. Takagi, T., Sasaki, S., Aoki, H. and Kikuchi, M.: Crystal chemistry of secretory stage in developing enamel. Japanese Journal of Oral Biology 35:338-348,1993.
10. Takagi, T., Suzuki, M., Sasaki, S., Nakamura, S., Aoki, H. and Kikuchi, M.: Effects of enamel proteins on mineralization in vitro. J. Hard Tissue Biol. 2:30-39,1993

1994

1. Iimura, T., Oida, S., Ichijo, H. Goseki, M., Maruoka, Y., Takeda, K. and Sasaki: Modulation of responses to TGF-β by 1,25 dihydroxyvitamin D3 in MG-63 osteoblastic cells: Possible involvement of regulation of TGF-β type II receptor. Biochem. Biophys. Res. Commun. 201:980-9871994
2. Iimura, T., Oida, S., Takeda, K., Maruoka, Y. and Sasaki, S.: Changes in Homeobox containing gene expression during ectopic

bone formation induced by bone morphogenetic protein. Biochm. Biophys. Res. Commun. 201:980-987,1994
3. Ishisaki, A., Oida, S., Momose, F., Amagasa, T., Rikimaru, K., Ichijo, H. and Sasaki, S.: Identification and characterization of autocrine-motility-factor-like activity in oral squamous cell carcinoma cells. Int. J. Cancer 59:783-788,1994
4. Ishiyama, M., Inage, T., Shimokawa, H. and Yoshie, S.: Immunohistochemical detection of enamel proteins in dental matrix of certain fishes. Bulletin de l' Institut Oceanographique 14:175-182,1994
5. Omi, N., Goseki, M, Oida, S., Sasaki, S. and Ezawa,I. : The nutritional evaluation of globin on maintenance of bone metabolism in ovariectomized osteoporotic rats. J. Nutr. Sci. Vitaminol. 40:443-457,1994
6. Suzuki, M., Shimokawa, H., Takagi, Y. and Sasaki, S.: Calcium binding properties of fetuin in fetal bovine serum. J. Exp. Zool. 270:501-507,1994
7. Takagi, Y., Kindaichi, J., Moriyama, K., Suzuki, M., Shimokawa, H. and Sasaki, S.: Distribution of α 2-HS glycoprotein in pathological human dentins. Conn. Tissue Res. 30:309-321,1994
8. Takeda, K., Oida, S., Goseki, M., Iimura, T., Maruoka, Y., Amagasa, T. and Sasaki, S.: Expression of bone morphogenetic protein gene in the human dental pulp cells. Bone 15: 467-470,1994
9. Takeda, K., Oida, S., Ichijyo, H., Iimura, T., Maruoka, Y., Amagasa, T. and Sasaki, S.: Molecular cloning of rat bone morphogenetic protein (BMP) type 1A receptor and its expression during ectopic bone formation induced by BMP. Biochem. Biophys. Res. Commun. 204: 203-209,1994
10. Tamura, M., Shimokawa, H. and Sasaki, S.: Primary structure of bovine interstitial collagenase deduced from cDNA sequence. DNA Sequence 5: 63-66,1994
11. Iimura, T.: Molecular cloning and expression of homeobox-containing genes during hard tissue development. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 61:590-604,1994.
12. Kuroyama, Y., Aoki, H., Akao, M., Touhou, M., Yoshizawa, K., Nakamira, S., Ohgaki, M. and Takagi, T.: Histocompatibility of α -TCP coated titanium in subcutaneous tissue. J. Hard Tissue Biol. 3:39-45,1994
13. Kuwata, H., Inage, M., Wakao, K., Sunouchi, M. and Shimokawa, H.: Expression of the osteonectin and type I collagen genes during dentinogenesis. Japanese Journal of Oral Biology 36:611-622,1994
14. Nagai, N., Nagatuka, J., Inoue, M., Murata, M. Akagi, I., Sakae, T., Takagi, T., Mizuno, M., Takita, Y. and Kuboki, Y.: Interface between biomaterial and tissues, and the emergence of a bone inducing protein, BMP. J. Tokyo Dental Assoc. 42:11-21,1994
15. Nagatuka, J., Imamura, T., Inoue, M., Murata, M., Akagi, I., Ishiwari, Y., Hayashi, M., Konouchi, H., Kou, K., Shin, S., Missana, L., Takagi, T. and Nagai, N.: Distribution of bone matrix protein mRNA during new bone formation induced by BMP. J. Hard Tissue Biol. 3:7-12,1994

1995

1. Arai,N., Ohya,K., Kasugai, S. Shimokawa, H., Oida, S. Ogura, H. and Amagasa, T.: Expression of bone sialoprotein mRNA during bone formation and resorption induced by colchicine in rat tibial bone marrow cavity. J. Bone Miner. Res. 10:1209-1217,1995
2. Goseki, M. Oida, S., Ogata, Y. and Sasaki, S.: Immunological differentiation of human tissue-nonspecific type alkaline phosphatase by a monoclonal antibody to the enzyme of human osteoblast-like cells. Bull. Tokyo Med. Dent. Univ. 42:51-56,1995
3. Goseki, M., Oida, S., Takeda, K., Ogata, Y., Iimura, T., Maruoka, Y., and Sasaki, S.: Identification of bone-type alkaline phosphatase mRNA from human periodontal ligament cells. J. Dent. Res. 74:319-322,1995
4. Goseki, M. Omi, N., Oida, S., Ezawa, I. and Saski, S.: Voluntary exercise increases osteogenetic activity in rat bones. Bull. Tokyo Med. Dent. Univ. 42:1-8,1995
5. Hashimoto-Uoshima, M., Hascall, V. C., MacCallum, D. K. and Yanagishita, M.: Biosynthesis of proteoglycans and hyaluronic acid by rat oral epithelial cells (keratinocytes) in vitro. Arch. Biochem. Biophys. 316:724-732,1995
6. Iimura, T., Oida, S., Takeda, K., Maruoka, Y., Shimokawa, H., Ibaraki, K. and Sasaki, S.: Molecular cloning and sequence of bovine Msx-1 homeobox-containing gene cDNA from a bovine odontoblast library. DNA Sequence 5:233-237,1995
7. Kasugai, S., Oida, S., Iimura, T., Arai, N., Takeda, K., Ohya, K. and Sasaki, S.: Expression of prostaglandin E receptor subtype in bone: Expression of EP2 in bone development. Bone 17:1-4,1995
8. Kina, J.R., Yoshida, N., Goseki, M., Sasaki, S. and Ishikawa, I.: Properties of alkaline phosphatase in the gingival crevicular fluid. Bull.Tokyo Med. Dent.Univ. 42: 57-65,1995
9. Maruoka, Y., Oida, S., Iimura, T., Takeda, K., Asahina, I., Enomoto, S. and Sasaki, S.: Production of functional human bone morphogenetic protein-2 using a baculovirus / Sf-9 insect cell system. Biochem. Mol. Biol. Int. 35: 957-963,1995
10. Midura, R. J., Calabro, A., Yanagishita, M. and Hascall, V. C.: Nonreducing end structures of chondroitin sulfate chains on

aggrecan isolated from swarm rat chondrosarcoma cultures. J. Biol. Chem. 270:8009-801,1995
11. Midura, R. J. and Yanagishita, M.: Chaotropic solvents increase the critical micellar concentrations of detergents. Anal. Biochem. 228:318-322,1995
12. Nagai, N., Nagatuka, H., Murata, M., Inoue, M., Akagi, T., Qin, C.L., Nakano, K., Ishiwari , Konouchi, H., Tsujigiwa, H., Chigono, Y. and Takagi, T.: Gene expression of bone matrix protein mRNA during BMP induced chondrogenesis and osteogenesis by in situ hybridization. J. Hard Tissue Biol. - International 4:15-23,1995
13. Nagastuka, H., Shin, H. I., Park, H.K.,Ishiwari, Y., Kuroda, K., Nosaka, Y., Song, H., Qin, C.L., Zhang, S.Q., Nakano, K., Tujigiwa, H., Chigono, Y., Takagi, T. and Nagai, N.: Immunohistochemical study of cytokeratin pattern in follicular ameloblastoma and plexiform ameloblastoma. J. Hard Tissue Biol. - International- 4:50-56,1995
14. Ohashi, K., Hara, M., Yanagishita. M., Kawai, R., Tachibana, S. and Ogura, Y.: Hemodialysis-associated amyloidosis and changes in extracellular matrices. Virchows Arch. 427:49-59,1995
15. Oida, S., Iimura, T., Arai, N., Takeda, K., Ishisaki, A., Maruoka, Y., Terashima, T., Shimokawa, H. and Sasaki, S.: Molecular cloning of mouse amelogenin genes from mandibular cDNA library. J. Hard Tissue Biol. 4:64-69,1995
16. Oida, S., Iimura, T., Maruoka, Y., Takeda, K., and Sasaki, S.: Cloning and sequence of bone morphogenetic protein-4 (BMP-4) from a human placental cDNA library. DNA Sequence 5:273-275,1995
17. Roderiquez, G., Oravecz, T., Yanagishita, M., Bou-Habib, D. C. and Norcross, M. A.: Mediation of human immunodeficiency virus type 1 binding by interaction of cell surface heparan sulfate proteoglycans with the V3 region of envelope gp120-gp41. J. Virology 69:2233-2239,1995
18. Seko, Y., Shimokawa, H. and Tokoro, T.: Expression of bFGF and TGF-β in experimental myopia in chicks. Invest. Ophthal. Visual Sci. 36:1183-1187,1995
19. Shin, H.I., Ishiwari, Y., Nagatsuka, H, Inoue M., Murata, M., Konouchi, H., Qin C.L., Nakago, T., Chigono, Y., Takagi, T. and Nagai, N.: The effect of enzymatic treatment on immunohistochemical staining of collagens in mandibular condyle of rats. J. Hard Tissue Biol. -International- 4:8-14,1995
20. Uhlin-Hansen, L. and Yanagishita, M.: Brefeldin A inhibits the endocytosis of plasma-membrane-associated heparan sulphate proteoglycans of cultured rat ovarian granulosa cells. Biochem. J. 310:271-278,1995
21. Yanagishita, M.: Cell surface heparan sulfate proteoglycans: Modulator of growth factors, cytokines and viral infection. Medicina (Buenos Aires) 55:615-616,1995
22. Inage, M., Kuwata, H., Uehara, N., Shimokawa, H., Sunouchi, M. Sasaki, T., Terakado, M. and Satou, H.: Expression of TGF-β and type I collagen genes during healing of extracted tooth sockets. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 41:359-372,1995
23. Nagai, N., Nagatuka, L., Inoue, M., Murata, M., Akagi, I., Tujigime, H., Nakano, K., Mabuchi, Y., Sakae, T., Takagi, T. and Kuboki, Y.: Calcification at the interface between apatite and bone, and the induction of ectopic bone formation by BMP. J. Hard Tissue Biol. 4(3):79-90,1995
24. Shibuya, T., Takagi, T., Kino, K., Kobayashi, J., Kobayashi, A. and Amagasa,: Comparison of proteoglycans between in the porcine temporomandibular joint disk, retrodiscal tissue and superficial layer of chondyle. J. Hard Tissue Biol. 4(3):1-8,1995

1996

1. Akiyama, H., Kanai, S., Hirano, M., Kumei, Y., Shimokawa, H., Katano, H., Hara, E., Song, S., Mukai, C. and Nagaoka, S.: An improved quantitative RT-PCR fluorescent method for analysis of gene transcripts in the STS-65 space shuttle experiment. J. Biotechnology 47: 325-333, 1996
2. Baba, T., Terashima, T., Oida, S. and Sasaki, S.: Determination of enamel protein synthesized by recombined mouse molar tooth germs in organ culture. Arch. Oral Biol. 2:215-219,1996
3. Camaioni, A., Salustri, A., Yanagishita, M. and Hascall, V. C.: Proteoglycans and proteins in the extracellular matrix of expanded mouse cumulus cell-oocyte complexes. Arch. Biochem. Biophys. 325:190-198,1996
4. Goseki, M., Omi, N., Yamamoto, A., Oida, S., Ezawa, I. and Sasaki, S.: Ovariectomy decreases osteogenetic activity in rat bone. J. Nutr. Sci. Vitaminol. 42:55-67,1996
5. Goseki-Sone, M., Oida, S., Iimura, T., Yamamoto, A., Matumoto, H.N., Omi, N., Maruoka, Y., Ezawa, I. and Sasaki, S.: Expression of mRNA encoding intestinal type alkaline phosphatase in rat liver and its increase by fat-feeding. Liver 16:358-364,1996
6. Iimura, T. Baba, O. Maruoka, Y., Takeda, K., Sasaki, S., Shimokawa, H. and Oida, S.: Homeobox gene expression during bone formation induced by BMP. Annals of New York Academy of Sciences 785:274-277,1996
7. Inage, T., Shimokawa, H., Wakao, K. and Sasaki, S.: Gene expression and localization of amelogenin in the rat incisor. Adv.

Dent. Res. 10:201-207,1996
8. Isobe, M. and Yamazaki, Y. Oida, S., Ishihara, K., Nakabayashi, N. and Amagasa, T.: Bone morphogenetic protein encapsulated with a biodegradable and biocompatible polymer. J. Biomed. Mater. Res. 32:433-438,1996
9. Kano, S., Akao, M. and Takagi, T.: Morphological and crystallographic observations of mammoth turk and ivory. Reports of the Institute for Medical & Dental Engineering 30:8-17,1996
10. Kumei, Y., Shimokawa, H., Katano, H., Hara, E., Akiyama, H., Hirano, M., Mukai, C., Nagaok, S., Whitson, P. A. and Sams, C. F.: Microgravity induces prostaglandin E2 and interleukin-6 production in normal rat osteoblasts: Role in bone demineralization. J. Biotechnology 47:313-324,1996
11. Nakajima, Y., Shimokawa, H., Terai, K., Onoue, H., Seino, Y., Tanaka, H., Sobue, S., Kitamura, Y. and Nomura, S.: Identification of the cell type origin of odontoma-like cell masses in microphthalmic (mi/mi) mice in situ hybridization. Path. Int. 46:743-750, 1996
12. Niinaka, Y., Oida, S., Ishisaki, A., Takeda, K., Iimura, T., Maruoka, Y., Momose, F. Negisi, A., Ichijo, H., Amagasa, T., Sasaki, S., Watanabe, H. and Raz, A.: Autocrine motility factor and its receptor expressions in human oral squamous cell carcinoma (SCC) cells. Int. J. Oncol. 9:433-438,1996
13. Nosaka, Y., Takahashi, A.,Nosaka, T., Ohnoue, Y., Yasuda, K., Liliana, M., Murata, M., Kohnouchi, H., Takagi, T. and Nagai, N.: Histological and morphometrical study of bone formation in rat subcutaneous tissue by BMP - collagen particles. J. Hard Tissue Biol. - International- 5:15-22,1996
14. Oida, S., Miyazaki, H., Iimura, T., Suzuki, M., Sasaki, S. and Shimokawa, H.: Molecular structure of the mouse amelogenin genomic DNA. DNA sequences 6:307-310,1996
15. Okayama, S., Kawajiri, K., Kondo, K., Takagi, T. and Akao, M.: Change in strength and composition of rat femur bone by exercise. J. Hard Tissue Biol. -International- 5: 15-22,1996
16. Seko, Y., Shimokawa, H. and Tokoro, T.: In vivo and in vitro association of retinoic acid with form deprivation myopia in the chick. Exp. Eye Res. 63:443-452,1996
17. Takagi, T., Fujisawa, R., Akao, M., Kikuchi, M., Nagai, N. and Sasaki, S.: Effect of ameloenin and enamelin in vitro mineralization in gel. J. Hard Tissue Biol. - International- 5:15-22,1996
18. Yamazaki, Y., Oida, S., Ishihara, K. and Nakabayashi, N.: Ectopic induction of cartilage and bone by bovine bone morphogenetic protein using a biodegradable polymeric reservoir. J. Biomed. Mater. Res. 30:1-4,1996
19. Yanagishita, M. and Sakaguchi, K.: Cell surface heparan sulfate proteoglycan and fibroblast growth factor receptors. Allergology (Tokyo) 2:160-165,1996
20. Yang, Y., Yanagishita, M. and Rechler, M.: Heparin inhibition of insulin-like growth factor-binding protein 3 binding to human fibroblasts and rat glioma cells: Role of heparan sulfate proteoglycans. Endocrinology 137:4363-4371,1996
21. Okayama, S., Aoki, H., Ejiri, K., Endou, K., Takagi, T. and Akao, M.: Alteration of bone structure and strength by excercise. J. Hard Tissue Biol. 5:76-81,1996
22. Takagi, T.: Bone Morphogenetic Protein. Japanese Journal of Material Science 33:152-154,1996

1997

1. Funato, N., Moriyama, K., Shimokawa, H. and Kuroda, T.: Basic fibroblast growth factor induces apoptosis in myofibroblastic cells isolated from rat palatal mucosa. Biochem. Biophys. Res. Comm. 240:21-6, 1997
2. Hikiji, H., Shin, W.S., Oida, S., Takato, T., Koizumi, T. and Toyo-oka, T.: Direct action of nitric oxide on osteoblastic differentiation. FEBS Letters 410:238-242, 1997
3. Iimura, T., Takeda, K., Goseki, M., Maruoka, Y., Sasaki, S. and Oida, S.: Characterization of two-length cDNA for human Msx-2 from dental pulp-derived cells. DNA Sequence 8:87-92,1997
4. Kuboki, Y., Liu, A., Ono, M., Takita, T., Moriwaki, Y., Iijima, M. and Takagi, T.: Two new in vitro calcification systems showing the highest calcifiability of enamel proteins among bone and dentin matrices. Conn. Tissue Res. Enamel 6:24,1997
5. Lietman, S. A., Yanagishita, M. and Reddi, A. H.: Stimulation of proteoglycan synthesis in porcine articular cartilage explants by recombinant osteogenetic protein-1 (BMP-7). J. Joint Surg. 79-A:1132-1137,1997
6. Matsumoto, N. H., Yamamoto, A., Iimura, T., Oida, S., Ezawa, I., Sasaki, S. and Goseki-Sone, M.: Effects of ovariectomy on intestinal alkaline phosphatase expression in rats. J. Nutr. Sci. Vitaminol. 43: 529-539,1997
7. Nagatsuka, H., Inoue, M., Akagi, T., Ishiwari, Y., Guiru, L.,Huang, B.J., Takagi, T., Gomaa, M., Attia-Zouair, and Nagai, N.: Gene expression of chondro-osseous cells in heterotopic bone formation induced by rhBMP-2. J. Hard Tissue Biol. - International- 6:21-26,1997
8. Nosjean, O., Koyama, I., Goseki, M., Roux, B. and Komoda, T.: Human tissue non-specific alkaline phosphatases: Sugar-

moiety-induced enzymic and antigen modulations and genetic aspects. Biochem. J. 321:297-303,1997
9. Oida, S., Morotome, Y., Nakamura, T. and Terashima, T.: Molecular cloning of PCR amplified BMP-related genes (GDF-5, 6 and 7) from rat tooth cells using modified pBluescript SK+ vector. J.Hard Tissue Biol. 6:16-20,1997
10. Orimo, H., Goseki-Sone, M., Sato, S. and Shimada, T.: Detection of deletion 1154-1156 hypophosphatasia mutation using TNSALP exon amplification. Genomics 42:364-366,1997
11. Takagi, T., Nakamura, S. and Akao, M.: In vitro studies on ameloblast cells and mineralization. J. Hard Tissue Biol. -International- 6:114-120,1997
12. Takagi, T., Nakamura, S., Akao, M. Tagami, J. and ReGeros, R.Z.: Mineralization and crystal chemistry of developing bovine enamel. J. Hard Tissue Biol. - International- 6:89-94,1997
13. Takagi, T., Ogasawara, T., Akao, M. and Nagai N.: pH and carbonate levels in developing enamel. Conn. Tissue Res., Enamel:6-23,1997
14. Yokozeki, M., Moriyama, K., Shimokawa and H. Kuroda, T.: Transforming growth factor-beta 1 modulates myofibroblastic phenotype of rat palatal fibroblasts in vitro. Experimental Cell Research 23:328-36,1997
15. Sone-Goseki, M., Oida, S., Yanagishita, M. Suda, T.: Molecular biological significance of alkaline phosphatase as a marker of bone metabolism. Journal of Clinical Science 33:165-172,1997
16. Takagi, T.: Shibuya, T. Kino, K. and Amagasa, M.: Biochemical analysis of temporomandibular joint tissue matrix. J. Hard Tissue Biol. 6:33-43,1997
17. Takagi, T. Tagami, J. and Nakamura, S.: Metabolism and calcification of bovine tooth enamel. J. Hard Tissue Biol. 6:74-80,1997
18. Yanagishita, M.: Function of proteoglycans in the extracellular matrix. The Journal of the Stomatological Society, Japan 64:193-204,1997
19. Matumoto, H., Yamamoto, A., Iimura, T. Oida, S., Ezawa, I., Sasaki, T. and Goseki-Sone, M.: Effects of ovariectomy on intestinal alkaline phosphatase expression in rats (1997) J. Nutr. Sci. Vitaminol. 43:529-539
20. Oida, S., Morotome, Y., Nakamura, T. and Terashima, T.: Molecular cloning of PCR amplified BMP-related genes (GDF-5, 6 and 7) from rat tooth cells using modified pBluescript SK+ vector (1997) J. Hard Tissue Biol. 6:16-20
21. Lietman, S. A., Yanagishita, M., Sampath, T. K. and Reddi, H.: Stimulation of proteoglycan synthesis in explants of porcine articular cartilage by recombinant osteogenic protein-1 (bone morphogenetic protein-7) (1997) J. Bone and Joint Surgery 79:1132-7
22. Iimura, T., Takeda, K., Goseki, M., Maruoka, Y., Sasaki, S. and Oida, S.: Characterization of two-length cDNA for human MSX-2 from dental pulp-derived cells. DNA Sequence 8:87-92,1997

1998

1. Goseki-Sone, M., Orimo, H., Iimura, T., Takagi, Y., Watanabe, H., Takeda, K., Sato, S., Mayanagi, H., Shimada, T. and Oida, S.: Hypophosphatasia: Identification of five novel missense mutations (G507A, G705A, A748G, T1155C, G1320A) in the tissue-nonspecific alkaline phosphatase gene among Japanese patients (1998) Human Mutation Suppl. 1:S263-267
2. Abe, M., Akeno, N., Ohida, S. and Horiuchi, N.: Inhibitory effects of 1,25-dihydroxyvitamin D3 and 9-cis-retinoic acid on parathyroid hormone-related protein expression by oral cancer cells (HSC-3) J. Endocrinology 156:349-357,1998
3. Yanagishita, M.: Cellular catabolism of heparan sulfate proteoglycan. Trends in Glycoscience and Glycotechnology 10:57-63,1998
4. Inage, M., Uehara, N., Kuwata, H., Oida, S., Shimokawa, H., Sasaki, T., Ohuchi, H., Horibe, T., Kaneko, K., Kamogawa, H., Terakado, M. and Sato, H.: Expression of BMP during the wound healing after teeth extraction. Japanese Journal of Oral Biology 40:42-52,1998
5. Morotome, Y., Goseki-Sone, M., Ishikawa, I. and Oida, S.: Gene expression of Growth and differentiation factors-5, -6, and -7 in developing bovine tooth at the root forming stage. Biochem. Biophys. Res. Comm. 244:85-90,1998
6. Oida, S., Yamazaki, Y., Mori, M. and Asahina, I.: Biological activity of bone extract containing TGF-β superfamily proteins (1998) J. Hard Tissue Biol. 7:27-34,1998
7. San Miguel, S.M., Goseki-Sone, M., Sugiyama, E., Watanabe, H. Yanagishita, M. and Ishikawa, I.: The effects of retinoic acid on alkaline phosphatase activity and tissue-non-specific alkaline phosphatase gene expression in human periodontal ligament cells and gingival fibroblasts J. Periodontl. Res. 33:428-433,1998
8. Yanagishita, M.: Proteoglycan. GlycoWord, http://www.glycoforum.gr.jp 1998
9. Yanagishita, M.: Biosynthesis and degradation of heparan sulfate. GlycoWord http://www.glycoforum.gr.jp,1998
10. Goseki-Sone, M., Orimo, H., Iimura, T., Miyazaki, H., Oda, K., Shibata, H., Yanagishita, M., Takagi, Y., Watanabe, H.,

Shimada, T. and Oida, S.: Expression of the mutant (1735T-DEL) tissue-nonspecific alkaline phosphatase gene from hypophosphatasia patients. J. Bone and Mineral Res. 13:1827-34,1998
11. Erlacher, L., Mccartney, J., Piek, E., Duke, T., Yanagishita, M., Oppermann, J. and Luyten F.: Cartilage-derived morphogenetic protein and osteogenic protein-1 differentially regulate osteogenesis. J. Bone and Mineral Research 13:383-392,1998
12. Ishikawa, M., Mikami, M., Shimokawa, H. and Oida S.: Amelogenin protein in tooth germs of the snake Elaphe quadrivigata, immunohistochemistry, cloning and cDNA sequence. Arch. Histol. Cytol. 61:467-474,1998

1999

1. Goseki-Sone, M., Iimura, T., Takeda, K., Ogata, Y., Yanagishita, M. and Oida, S.: Expression of mRNA encoding tissue - nonspecific alkaline phosphatase in human dental tissues. Calcif. Tissue Int. 64:160-162,1999
2. Goseki-Sone, M., Iimura, T., Takeda, T., Nifuji, A., Ogata, Y. Yanagishita, M. and Oida, S.: Expression of mRNA encoding tissue-nonspecific alkaline phosphatase in human dental tissues. Calcif. Tissue Int. 64:160-162,1999
3. Shibata, S., Kaneko, S., Yanagishita, M. and Yamashita, Y.: Histochemical localization of hyaluronan and versican in the rat molar dental pulp. Arch. Oral Biol. 44:373-376,1999
4. San Miguel, S. M., Goseki-Sone, M., Sugiyama, E., Watanabe, H., Yanagishita, M. and Ishikawa, I.: Tissue-non-specific alkaline phosphatase mRNA expression and alkaline phosphatase activity following application of retinoic acid in cultured human dental pulp cells. Archives of Oral Biology 44:861-869,1999

2000

1. Ikeda, Y.：Craniofacial development and heparan sulfate proteoglycans. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 67(1):1, 2000
2. Ogihara, Y., Suda, N., Hammond, V. E., Senior, P. V.. Beck, F. and Yanagishita, M.: Biosynthesis of proteoglycan in bone and cartilage of parathyroid hormone-related protein (PTHrP)-knockout mice. J. Bone Miner. Metab. 2001 in press

B. Book Chapters (1993-99)

1. Takagi, T.: Matrix of jaw joint. Dictionary of Jaw Joint (II), Japanese Review in Dentistry p108-111,1993
2. Sasaki, S. and Shimokawa, H.: Biochemistry of the developing enamel matrix. P85-104, in DENTAL ENAMEL (Robinson, C., Kirkham, J. and Shore, R. eds.), CRC Press, 1995.
3. Shimokawa, H.: Osteonectin. In BONE SCIENCE, p85-90, Bone development and resorption and their regulatory factors (Suda, T. ed.) Hirokawa, 1995.
4. Shimokawa, H.: Tissue destruction and enzymes in periodontal diseases p23-28, Periodontology (Ishikawa, I. ed.) Nagasue, 1996.
5. Oida, S.：Molecular cloning of BMP family molecules by PCR. New techniques for research in morphogenesis and molecular mechanisms. (Nagai, N. ed.) Kokuhokenkyoukai, p.45-55. 1998.
6. Oida, S.：Generation of recombinant proteins for the analysis of bone induction by BMPIn: (Nagai, N. ed.) Kokuhokenkyoukai, p. 166-171. 1998.
7. Goseki-Sone, M. and Oida, S.：Analysis of genetic, hard tissue disorders by PCR-SSCP, a gentic analysis of alkaline phosphatase In: (Nagai, N. ed.) Kokuhokenkyoukai, p.56-62. 1998.
8. Oida, S.: Bone regeneration by differentiation factors (BMPs). In: Ikada, Y. and Yamaoka, Y. editors. Tissue Engineering for Therapeutic Use 1. Organ Regeneration. Tokyo: Elsevier Science; 1998. p111-118.
9. Yanagishita, M.：Proteoglycans in bone tissue In: (Orimo, H. ed.) Osteoporosis, pathology, diagnosis, prevention and treatment, Life Science Publications, p.136-139. 1999.
10. Yanagishita, M.: Isolation of proteoglycans from cell cultures and tissues: General principles. In. Iozzo, R. V. editor. Proteoglycan Protocol. Totowa, NJ: The HUMANA Press, 2000. in press
11. Yanagishita, M.：Metabolic radiolabeling of heparan sulfate proteoglycans In: Basic Methods in Biochemistry, vol. 5 (Taniguchi, N. ed) 2000 in press

C. Review Articles (1993-99)

1. Sasaki, T.: Progresses in hard tissue researchJ. Hard Tissue Biol. 2:1,1993
2 Oida, S.: Recombinant BMP. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 60:574,1993
3. Oida, S.: Structure and expression of BMP gene. The Journal of Dental Medicine 38:355-363,1993
4. Ishizaki, A. and Oida, S.: Study on an autocrine motility of factor-like substance produced by epidermoid carcinoma of the

human oral cavity. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 60:418,1993
5. Oida, S.: TGF-β super-family molecules in bone and cartilage. The Bone 7:49-56,1993
6. Sasaki, S.: Matrix components and differentiation markers in bone. Japanese Journal of Bone Metabolism 12:1-7,1994
7. Sasaki, S.: Genetic engineering in bone morphogenetic proteins. Dental Outlook 83:1126-1128,1994
8. Oida, S.: TGF-β and bone formation. Clinical Calcium 4:514-518,1994.
9. Goseki, M. Oida, S. and Sasaki, S.: Bone type alkaline phosphatase as a marker of bone metabolism. Japanese Journal of Electrophoresis 38:149-153,1994
10. Sasaki, S. and Shimokawa, H.: The amelogenin gene. Int. J. Develop. Biol. 39:127-133,1995
11. Iimura, T., Oida, S. and Shimokawa, H.: Homeobox and BMPbone development and differentiation. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 62:580,1995
12. Oida, S.: Hard tissue regeneration by BMP-dental treatment and gene. The Journal of the Japan Dental Association 15:121-127,1996
13. Oida, S.: Molecular biological research on hard tissue cell differentiation. J. Hard Tissue Biol. 5:82-91,1996
14. Oida, S.: Preparation of recombinant BMP. J. Hard Tissue Biol. 5:49-56,1996
15. Goseki, M., Oida, S. Yanagishita, M., and Suda, T.: Molecular biological significance of ALP as a marker of bone metabolism. Journal of Clinical Science. 33:165-172,1997
16. Takagi, T., Tagami, J. and Nakamura, S.: Metabolism and calcification of bovine tooth enamel. J. Hard Tissue Biol.6:74-88,1997
17. Tamura, M. and Oida, S.: Genes that make teeth. Laboratory Animal Technology and Science 99:313-318,1997
18. Yanagishita, M.:Function of proteoglycans in signal transduction. Igaku no Ayumi 184:247-250,1998
19. Yanagishita, M.: Regulation of cell proliferation by proteoglycans. Tanpakushitu Kakusan Koso - Protein, Nucleic Acid, Enzyme 43:2589-93,1998
20. Ikuta, M. and Yanagishita, M.：Analysis of heparan sulfate degrading enzyme (heparanase) in oral cancers. Kokubyo Gakkai Zasshi - The Journal of the Stomatological Society, Japan 65:125,1998