Hiroshima University Graduate School of Biomedical and Health Sciences (Dentistry) and Hiroshima University Hospital (Dental Departments)

Research Achievements 2023

Contents

Department of Maxillofacial Anatomy and Neuroscience
Department of Physiology and Oral Physiology
Department of Molecular Biology and Biochemistry
Department of Oral and Maxillofacial Pathobiology/Collaborative Research Laboratory Oral Inflammation Regulation
Department of Bacteriology
Department of Cellular and Molecular Pharmacology
Department of Biomaterials
Department of Mucosal Immunology
Department of Genomic Oncology and Oral Medicine
Department of Periodontal Medicine, and Division of Preventive and Restorative Dentistry (Department of Periodontics)
Department of Oral Oncology, Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Surgery)
Department of Oral and Maxillofacial Surgery, and Division of Oral and Maxillo-facial Surgery and Oral Medicine (Department of Oral and Maxillofacial Reconstructive Surgery)
Department of Advanced Prosthodontics, and Division of Preventive and Restorative Dentistry (Department of Oral Implant)
Department of Advanced Prosthodontics, and Division of Preventive and Restorative Dentistry (Department of Prosthetic Dentistry)
Department of Orthodontics and Craniofacial Development Biology, and Division of Oral Health and Development (Department of Orthodontics)
Department of Oral & Maxillofacial Radiology, Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Radiology)
Department of Biological Endodontics, and Division of Preventive and Restorative Dentistry (Department of Endodontics and Operative Dentistry)
Department of Pediatric Dentistry, and Division of Oral Health and Development (Department of Pediatric Dentistry)
Department of Dental Anesthesiology, and Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Dental Anesthesiology)

Department of Public Oral Health
Department of Oral Epidemiology
Department of Oral Health Management
Department of Anatomy and Functional Restorations
Department of Medical System Engineering

Department of Oral Biology & Engineering

Central Research Laboratory
Center for Cause of Death Investigation Research

Division of General Dentistry, Department of General Dentistry
Division of Oral Health and Development, Department of Oral Health
Division of Oral Health and Development, Department of Special Care Dentistry
Central Clinical Divisions, Special Dental Clinic Section
Central Clinical Divisions, Center for Oral Clinical Examination
Central Clinical Divisions, Dental Laboratory
Central Clinical Divisions, Dental Hygiene Section
Central Clinical Divisions, Division of Medical Informatics and Systems Management

(1) Staff and Students

Professor　Ryuji Terayama
Associate Professor: Kenta Uchibe
Assistant Professor: Shohei Kohno

(2) Main Research Activities

1: Studies on nociceptive transmission of orofacial region
2: Roles of glial cells in the development of neuropathic pain
3: Effects of administration of drugs on neuropathic pain
4: Roles of retinoic acid signaling in skeletal development
5: Studies on heterotopic ossification and related diseases
6: Studies on regulatory mechanisms of osteoblast differentiation

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Terayama R, Tsuji K, Furugen H, Duong M, Nakatani A, Uchibe K, Effects of peripheral nerve injury on the induction of c-Fos and phosphorylated ERK in the brainstem trigeminal sensory nuclear complex. Ann Neurosci. 2023 Jul;30(3):177-187. doi: 10.1177/09727531231156505.
2: Nakatani A, Kunimatsu R, Tsuka Y, Sakata S, Ito S, Kado I, Putranti NAR, Terayama R, Tanimoto K, High-frequency near-infrared semiconductor laser irradiation suppressed experimental tooth movement-induced inflammatory pain markers in the periodontal ligament tissues of rats. Lasers Med Sci. 2023 Apr 20;38(1):109. doi: 10.1007/s10103-023-03761-x.
3: Ishida E, Furusho H, Renn TY, Shiba F, Chang HM, Oue H, Terayama R, Ago Y, Tsuga K, Miyauchi M. Mouse maternal odontogenic infection with *Porphyromonas gingivalis* induces cognitive decline in offspring. Front Pediatr. 2023 Aug 11;11:1203894. doi: 10.3389/fped.2023.1203894. eCollection 2023.
4: Kharaghnani D, Kohno S, Minamizaki T, Hoshino T, Yoshiko Y. 2,3-Diphospho-D-glyceric acid inhibits calciprotein particle growth and calcification in MOVAS cells but not in MC3T3-E1 cells. Colloids Interface Sci Commun. 2022 Sep 20;50:100668. Doi: 10.1016/j.colcom.2022.100668

B) Review

C) Publications

1: Chondrocytes; Latest Osteoporosis Science (2nd ed.): Uchibe K, Yu X, Yambe S, Shukunami C: Japanese Journal of Clinical Medicine (in Japanese), 81-1, 90-94, 2023.

D) Other Publications

E) Presentation at Scientific Meeting

1: Terayama R, Uchibe K, Differential changes in the induction of c-Fos and phosphorylated ERK in the trigeminal spinal tract nucleus after peripheral nerve injury, The 64th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.
2: Ogashira S, Hoshino T, Kohno S, Yoshiko Y, Mir125b1-derived miR-125b-5p negatively regulates osteoblast differentiation, The 38th Annual Meeting of the Japanese Society for Bone and Mineral Research (Tokyo), 2023
3: Oshiro R, Kohno S, Hoshino T, Hatano R, Tanimoto K, Yoshiko Y, Transcriptomic analysis of calciprotein particle-mediated calcification in mouse vascular smooth muscle cells, The 128th Annual

Meeting of The Japanese Association of Anatomists (Sendai), 2023

4: Yimiti D, Uchibe K, Shukunami C, Miyaki S, Retinoic acid receptor agonist inhibits ectopic ossification and promotes Achilles tendon repair, The 38th Annual Meeting of the Japanese Society for Bone and Mineral Research (Tokyo), 2023.

5: Uchibe K, Terayama R, Targeted bone growth by local retinoid administration, The 64th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grant-in Aid-for Scientific Research (C):Kenta Uchibe, 22K10017, ¥4,160,000
2. Grant-in Aid-for Scientific Research (C):Shohei Kohno, 21K09816, ¥4,160,000
3. Grant-in Aid-for Scientific Research (C):Shohei Kohno, 21K09331, ¥100,000
4. Research Grant from Public Trust Cardiovascular Research Fund, Shohei Kohno, \2,000,000
5. Research Grant from Kobayashi Foundation, Shohei Kohno, \3,500,000

(5) Academic Awards, etc.

(6) Patents

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(1) Staffs and Students

Professor　SUGITA, Makoto
Associate Professor　SAKAYORI, Nobuyuki (from October)
Assistant Professor　SAKAYORI, Nobuyuki (until September)
Assistant Professor　MIYABE, Risako
Research Assistant　YOKOYAMA, Emi
Graduate Students　YAMAMOTO, Kuniyo; TAHARA, Eiki; IWAMOTO, Yuma; MATSUO, Katsuhiro

(2) Main Research Activities

1:　The neuronal bases of taste perception and the taste-ev%6Ûâ[Q6Hl3B”APH¥‘tBaq[()]TJ/F1 1: The neu(cep)39 13.6 b(o)-16 (f)94
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4: The roles of polyunsaturated fatty acids in midbrain dopaminergic neurogenesis and ingestive behaviors: Sakayori N: The 46th Annual Meeting of the Japan Neuroscience Society (Sendai), 2023.
5: The roles of dietary essential fatty acids in offspring's eating behaviors: Sakayori N: The 40th Suisan Yushi Gijyutu Konwakai (online), 2023.
6: The roles of essential fatty acids on brain development and function: Sakayori N: The 56th Hiroshima Shigakukai Sokai (Hiroshima), 2023.
7: Comprehensive behavioral analyses of mice derived from mothers fed a diet high in omega-6 and low in omega-3 fatty acids: Sakayori N, Fujii K, Katakura M, Kobayashi K, Takao K, Sugita M: The 77th Annual Meeting of the Japan Society of Nutrition and Food Science (Sapporo), 2023.
8: The roles of polyunsaturated fatty acids in brain development: Sakayori N: The 6th Spring Neurodevelopmental Biology Meeting (Sendai), 2023.
9: Ingestive behaviors in mouse offspring are affected by maternal dietary balance of polyunsaturated fatty acids： Sakayori N: The 100th Anniversary Annual Meeting of The Physiological Society of Japan (Kyoto), 2023.
10: Distinct neural firing changes are observed in unit recording from the rat prefrontal cortex during anesthesia: Miyabe R: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.
11: Mineralization-Promoting Ability of Hexaraphane® in Human Odontoblasts: Furusawa Y, Kimura M, Okunishi I, Ouchi T, Kato-Yamada T, Kurashima R, Sugita M, Shibukawa Y, Furusawa M: 2023 AADOCR/CADR Annual Meeting & Exhibition (Portland), 2023.
12: Functional characterization of bitter taste-relaying neurons in the parabrachial nuclei: Sugita M, Yamamoto K: The 100th Anniversary Annual Meeting of The Physiological Society of Japan (Kyoto), 2023.
13: Variation of stimulated saliva in various age group from children to the elderly: Analysis of caries risk test results: Obayashi N, Sugita M, Shintani T, Ando T, Miyata R, Kawaguchi H, Naito M, Kajiya M: The 33th Annual Meeting of Japanese Association of Oral Medicine (Utsunomiya), 2023.
14: Responses to conditioned taste stimuli of amygdalar neurons defined by genetic tracing after acquisition and extinction of conditioned taste aversion memory : Sugita M : The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grant-in-Aid for Scientific Research (B): Sakayori N., The roles of dietary essential fatty acids in feeding behaviors. 21H03357. \2,800,000.
2: Lotte Research Promotion Grant: Sakayori N., The roles of dietary essential fatty acids in the brain reward system. \1,000,000.
3: Grant-in-Aid for Research Activity Start-up: Miyabe R., Understanding of brain network involved in consciousness using by general anesthetics. 22K21063. ¥1,100,000.
4: Grant-in-Aid for Scientific Research (C): Sugita M., Genetic tracing to reveal the whole brain mapping of taste information processing. 21K09828. \1,100,000.

(5) Academic Awards, etc.

1: Sakayori N, Fujii K, Katakura M, Takao K, Sugita M: Topics Award, The 77th Annual Meeting of the Japan Society of Nutrition and Food Science, 2023

(6) Patents

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(1) Staff and Students

Professor: Chisa Shukunami
Associate Professor: Shigenori Miura (July 2023-)

1: Heterogenity of Scx+/Sox9+ cells that contribute to the formation of chondro-tendinous junction/chondro-ligamentous junction and the effects of Scx deletion on tendogenic, ligamentogenic, and chondrogenic differentiation: Xinyi Yu, Yuki Yoshimoto, Shinsei Yambe, Haruhiko Akiyama, Taiji Adachi, Ryosuke Kawakami, Chisa Shukunami: The 41st Annual Meeting of the Japanese Society for Bone and Mineral Research, 2023.
2: Functional roles of Sclerostin in the fibrocartilaginous enthesis Shinsei Yambe, Yuki Yoshimoto, Yu Xinyi, Haruhiko Akiyama, Taiji Adachi, Chisa Shukunami The 41st Annual Meeting of the Japanese Society for Bone and Mineral Research, 2023.
3: Deep tissue imaging of the tendon, ligament, and cartilage formation processes using ScxTomato;Sox9EGFP mouse embryos: Xinyi Yu, Ryosuke Kawakami, Takeshi Imamura, Chisa Shukunami: The 22nd Locomotor Science Meeting, 2023.
4: Regulation of the stiffness in the fibrocartilaginous enthesis by Sclerostin Shinsei Yambe, Koichiro Maki, Taiji Adachi, Chisa Shukunami The 22nd Locomotor Science Meeting, 2023.
5: Construction of an *in vitro* model of the annulus fibrosus of the intervertebral disc utilizing mechanical stress: Shigenori Miura: The 22nd Locomotor Science Meeting, 2023.
6: Sclerostin, a marker for mature fibrochondrocytes, modulates the stiffness gradient to maintain tissue integrity of the fibrocartilaginous enthesis. Shinsei Yambe, Yuki Yoshimoto, Xinyi Yu, Haruhiko Akiyama, Taiji Adachi, Chisa Shukunami 33rd Australian & New Zealand Bone and Mineral Society Annual Scientific Meeting (ANZBMS) 2023.
7: Regulation of the stiffness gradient in the fibrocartilaginous enthesis by Sclerostin Shinsei Yambe Online International Seminar, 2023.
8: Collagen-based microfluidic device for functional analysis of vascular endothelial cells Hayate Yamamoto, Jumpei Muramatsu, Shigenori Miura, Hiroaki Onoe: The 48th Annual Meeting of the Society for Chemistry and Micro-Nano Systems, 2023.
9: Identification of marker genes for predicting the osteogenic, chondrogenic, and adipogenic differentiation potentials of (MSC) Masami Kanawa, Akira Igarashi, Katsumi Fujimoto, Veronica Sainik Ronald, Tania Saskianti, Ayumu Nakashima, Yukihito Higashi, Hidemi Kurihara, Yukio Kato, Takeshi Kawamoto The 22nd Annual Meeting of the Japanese Society for Regenerative Medicine, 2023

F) Special lectures in academic meetings

Properties of cell populations that contribute to fibrocartilaginous enthesis formation Chisa Shukunami, hosted by Prof. Denitsa Docheva (Department of Musculoskeletal Tissue Regeneration) and Prof. Maximilian Rudert (Orthopaedic Hospital König-Ludwig-Haus KLH), Würzburg University, 2023.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grant-in-Aid for Scientific Research (B): Chisa Shukunami (Principal Investigator), 21H03107. ¥2,850,000.
2: Fund for the Promotion of Joint International Research (Fostering Joint International Research (B)): Chisa Shukunami (Principal Investigator), 21KK0161. ¥2,600,000.
3: 2023 Joint Usage/Research Center Program for Transdisciplinary Collaboration on Viral Research, Stem Cell Science and System Biology at Institute for Life and Medical Sciences, Kyoto University. Chisa Shukunami (Principal Investigator), ¥900,000.
4: Grant-in-Aid for Scientific Research (C): Chisa Shukunami (Co-Investigator), 22K10017. ¥50,000.
5: Grant-in-Aid for Scientific Research (A): Shigenori Miura (Co-Investigator), 23H00555. ¥1,500,000.
6: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto (Principal Investigator), 22K11803. ¥900,000.
7: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto Co-Investigator , 21K09792. ¥100,000.
8: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto Co-Investigator , 23K09162. ¥100,000.
9: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima

University (Next-Generation Fellows) Research Funds: Xinyi Yu, Clarification of the mechanism of tendon and ligament-specific transcriptional regulation by Scx. ¥400,000.

10: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (Next-Generation Fellows) Research Funds: Shinsei Yambe, Elucidation of enthesis formation and maintenance regulated by Scleraxis. 600,000

11: HU SPRING Research Grant Program Shinsei Yambe (Principal Investigator), 1,000,000.

(5) Academic Awards, etc.

Functional roles of Sclerostin in the fibrocartilaginous enthesis Shinsei Yambe, Yuki Yoshimoto, Yu Xinyi, Haruhiko Akiyama, Taiji Adachi, Chisa Shukunami The 41st Annual Meeting of the Japanese Society for Bone and Mineral Research: ANZBMS 2023 Travel Award, 2023

(6) Patents

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(1) Staffs and Students

Professor : Mutsumi Miyauchi
Assistant Professor : Hisako Furusho
: Fumie Shiba (Collaborative Research Laboratory)
Research Assistant : Masae Kitagawa
Graduate Student : Kennto Okamoto (D4) (Department of Molecular Oral Medicine and Maxillofacial Surgery)

(2) Main Research Activities

1: Study on correlation between periodontitis and preterm birth/ low birth weight

2: Study on development of prognostic/diagnostic examination system of preterm birth targeting serum Galectin-3

3: Study on correlation between odontogenic infection and NASH

4: Study on correlation between odontogenic infection and brain disease

5: Study on correlation between odontogenic infection and atrial fibrillation

6: Study on development of diagnosis/inspection system using expiratory air

7: Study on epidemiological study on the relationship between periodontal disease and systemic diseases using large-scale data of Hiroshima Branch of National Health Insurance Society

8: Study on regulation of periodontitis and stomatitis (Collaborative Research Laboratory)

A) Original Papers (including Case Reports)

1 : Molecular mechanisms of inhibitory effects of bovine lactoferrin on invasion of oral squamous cell carcinoma: Chea C, Miyauchi M, Inubushi T, Okamoto K, Having S, Takata T: Pharmaceutics 2023, 15(2), 562; https://doi.org/10.3390/pharmaceutics15020562.

2 : Relationship between fibrosis, endocardial endothelial damage, and thrombosis of left atrial appendage in atrial fibrillation: Miyauchi S, Tokuyama T, Hiyama T, Takahashi S, Miyauchi M, Okubo Y, Okamura S, Miyamoto S, Oguri A, Takasaki T, Katayama K, Nakano N: JACC Clin Electrophysiol. 2023 Jul;9(7 Pt 2):1158-1168. doi: 10.1016/j.jacep.2023.01.029. Epub 2023 Mar 22.

3 : Bovine lactoferrin suppresses tumor angiogenesis through NF- B pathway inhibition by binding to TRAF6: Ayuningtyas NF, Cea C, Saninggar KE, Ando T, Karina ES, Tanimoto T, Inubushi T, Maishi N, Hida K, Shindo M, Miyauchi M, Takata T: Pharmaceutics 2023, 15(1), 165; DOI: 10.3390/pharmaceutics15010165.

4 : *Porphyromonas gingivalis*-odontogenic infection is the potential risk for progression of nonalcoholic steatohepatitis-related neoplastic nodule formation: Sakamoto S, Nagasaki A, Shrestha M, Shintani T, Watanabe A, Furusho H, Chayama K, Takata T, Miyauchi M: Sci Rep. 2023 Jun 8;13(1):9350. doi: 10.1038/s41598-023-36553-y.

5 : Ghost cell odontogenic carcinoma arising in dentinogenic ghost cell tumor, peripheral: a case report. Sakamoto S, Ando T, Mizuta K, Ono S, Konishi M, Miyauchi M, Ogawa I: Pathol Int. 2023 Aug;73(8):367-372. doi: 10.1111/pin.13351. Epub 2023 Jul 4.

6 : Mouse maternal odontogenic infection with Porphyromonas gingivalis induces cognitive decline in offspring: Ishida E, Furusho H, Renn TY, Shiba F, Chang HM, Oue H, Terayama R, Ago Y, Tsuga K, Miyauchi M: Front Pediatr. 2023 Aug 11;11:1203894. doi: 10.3389/fped.2023.1203894. eCollection 2023.

7 : AXL activates YAP through the EGFR–LATS1/2 axis and confers resistance to EGFR-targeted drugs in head and neck squamous cell carcinoma: Okamoto K, Ando T, Izumi H, Kobayashi SS, Shintani T, Gutkind JS, Yanamoto S, Miyauchi M, Kajiya M.: Oncogene, 2023 Sep;42(39):2869-2877. doi: 10.1038/s41388-023-02810-7. Epub 2023 Aug 17.

8 : Ultrasonographic features of mass lesions in the oral submucosal epithelium using intraoral ultrasonography: Konishi M, Ando T, Miyauchi M, Kakimoto N: Head Neck, 2023 Sep 7. doi: 10.1002/hed.27509.

9 : CD40-CD40 ligand interaction between periodontal ligament cells and cementoblasts enhances periodontal tissue remodeling in response to mechanical stress: Yamamoto Y, Fujihara C, Nantakeeratipat T, Matsumoto M, Noguchi T, Kitagawa M, Yamada S, Takata T, Kitaura H, Murakami S: J Periodontal Res. 2023 Dec;58(6):1261-1271. doi: 10.1111/jre.13182. Epub 2023 Sep 18.

10: Research on bone tissue regeneration using heparin and its derivatives: Saito A: The Journal of Hiroshima University Dental Society, (55)2, 70-84. 2023.

11: Transformation of odontogenic keratocyst into solid variant of OKC (SOKC)/keratoameloblastoma during long-term follow-up: Yamasaki S, Shintani T, Ando T, Miyauchi M, Yanamoto S: Mol Med Rep. 2024 (impress).

12: Low tongue pressure and depression using Kihon Checklist for assessing frailty status among community-dwelling Japanese older adults: A pilot study: Yoshikawa M, Nishikawa Y, Kitagawa M, Nagao A, Hiraoka A, Haruta A, Takeuchi M, Yoshida M, Tsuga K: J Oral Rehabil. 2024 (impress)

13: A case of supermassive cemento-ossifying fibroma in the mandible. Article type: Case report: Koizumi K, Mishima T, Ito N, Furusho H, Ando T, Yanamoto S, J Oral Maxillofac Surg Med Pathol. 2024 (impress)

14: Periodontal treatment during the blanking period improves the outcome of atrial fibrillation ablation: Miyauchi S, Ouhara K, Shintani T, Tokuyama T, Okubo Y, Okamura S, Miyamoto S, Oguri N, Uotani Y, Takemura T, Tari M, Hiyama T, Miyauch

the first step toward improving diagnostic accuracy in oral cytology: Unehara R, Mori T, Mishima S, Ochi M, Ohue Y, Shimizu T, Kaneko Y, Ishida K, Ando T, Ogawa I, Aikawa T, Yanamoto S, Miyauchi M, Arihiro K: The 62th Annual Autumn Meeting of Japanese Society of Clinical Cytology (Hakata), 2023.

2) Presentation at International Scientific Meeting

1 : A case report of Cemento-ossifying fibroma and odontoma associated with Sturge-Weber syndrome in the jaw: Furusho H, Satou A, Matsumura T, Nakano M, Sawaki K, Yoshioka Y, Akashi S, Mizukawa N, Iida S, Kakimoto N, Miyauchi M: the 21st International congress of Oral Pathology and Medeicine(Taipei), 2023.

3) Presentation at Domestic Scientific Meeting

1 : Evaluation of the Healing-Promoting Effect of Sodium Azulenesulfonate Solution in a Model of 5 Fluorouracil-Induced Oral Mucositis: Shiba F, Maekawara S, Furusho H, Takata T, Shimizu R, Miyauchi M: The 8th Annual Meeting of Japanese Association of Supportive Care in Cancer (Nara), 2023.

2 : Comparison of oral cytology and histology in Hiroshima University Hospital Unehara R, Kamio Y, Nakamura M, Mori T, Fujita N, Mishima S, Ochi M, Oue Y, Shimizu T, Kaneko Y, Ishida K, Ando T, Ogawa I, Miyauchi M, Arihiro K: The 37th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Clinical Cytology (Hiroshima), 2023.

3 : *Porphyromonas gingivalis* infects atrial tissue and progresses atrial fibrosis that is a cause of atrial fibrillation: Nakajima A, Phat PT, Furusho H, Matsuo M, Nishi H, Miaushi M: 2023 JDA Student Clinician Research Program (Tokyo), 2023.

4 : Deciphering the mechanism of cancer immune evasion induced by disruption of the Hippo pathway: Ando T, Okamoto K, Yanamoto S, Miyauchi M, Kajiya M: The 34th Annual Meeting of the Japanese Society of Oral Pathology (Osaka), 2023.

5 : Periodontitis relates to atrial fibrosis in patients with atrial fibrillation– Histological evaluation of human left atrial appendage: Yamane S, Suenaka S, Furusho H, Nishi H, Miyauchi M: The 34th Annual Meeting of the Japanese Society of Oral Pathology (Osaka), 2023.

6 : Evaluation of the Healing-Promoting Effect of Low Concentration Sodium Azulenesulfonate Solution in a 5-FU-Induced Oral Mucositis Model: Shiba F, Furusho H, Shimizu R, Miyauchi M: the 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.

7 : AXL activates YAP and confers resistance to EGFR inhibitors: Okamoto K, Ando T, Kajiya M, Miyauchi M, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.

8 : A case of transformation from odontogenic keratocyst to SOKC/keratoameloblastoma during long term follow-up: Yamasaki S, Shintani T, Hayashido Y, Ando T, Miyauchi M, Yanamoto S: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.

9 : The Antinociceptive effect of Equisetum arvense extract: Shiba F, Maekawara S, Furusho H, Inoue A, Ohta K, Miyauchi M: The 68th Congress of the Japanese Society of Oral And Maxillofacial Surgeons (Osaka), 2023.

10: YAP/TAZ confers resistance against splicing inhibitors in head and neck squamous cell carcinoma: Ando T, Okamoto K, Shintani T, Yanamoto S, Miyauchi M, Kajiya M: The 82nd Annual Meeting of the Japanese Cancer Association (Yokohama), 2023.

11: Gingipain inhibition suppresses *P. gingivalis* odontogenic infection-induced liver fibrosis in NASH: Furusho H, Renn TY, Shiba F, Miyauchi M: The 69th Autum Annual Meeting of the Japanese Society

of Pathology (Kurume), 2023.

4 Case report

1 Maxillary tumor (Ossifying fibroma and complex odontoma associated with Stargie-Weber syndrome) Furusho H, Sato A, Taniguchi K, Yamasaki R, Ichimura K, Kakimoto N, Miyauchi M 74th Meeting of Hiroshima Pathological Conference (Hiroshima), 2023.

2 : Mandibular cyst (Developmental odontogenic cyst with characteristic features of glandular odontogenic cyst and odontogenic keratocyst): Kataoka N, Ando T, Asada Y, Fukutani T, Tani R, Suei Y, Kakimoto N, Yanamoto S, Miyauchi M, Ogawa I, Kajiya M: The 142nd Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2023

(4) Status of Receiving Grants-in Aid for Scientific Research

1 : Grants-in-Aid for Scientific Research (Scientific Research(C)): Masae Kitagawa (Representative, New), Development of a Rapid Diagnostic Set for Oral Bacteria Associated with Systemic Disease Using Saliva

2 : Grants-in-Aid for Scientific Research (Scientific Research(C)): Mutsumi Miyauchi (Co-Investigator, New), Development of a Rapid Diagnostic Set for Oral Bacteria Associated with Systemic Disease Using Saliva

3 Grant-in-Aid for Scientific Research (Scientific Research(B)): Mutsumi Miyauchi (Representative, Continuance), Comprehensive study on the effects of periodontal pathogen on the pathophysiology of atrial fibrillation

4 Grant-in-Aid for Scientific Research (Scientific research (C)): Mutsumi Miyauchi (Co-Investigator, Continuance), Evaluation of epigenetic aging changes in hard tissues and its application to age estimation

5 Grants-in-Aid for Scientific Research (Grant-in-Aid for Early-Career Scientists): Fumie Shiba (Representative, New), A Novel Mechanism of Stomatitis Pathogenesis Based on Transcriptome Analysis of a Stomatitis Initiation Stage Model.

6 Collaborative research fund from Earth Co. (Continuance): Mutsumi Miyauchi (Study on oral disease)

7 : Donated fund for Hiroshima Prefecture tumor registration business (Continuance): Mutsumi Miyauchi (Study on diagnosis for oral diseases)

8 : Donated fund from Mitsubishi-Mihara Hospital (Continuance): Mutsumi Miyauchi (Study on diagnosis for oral disease)

(5) Academic Awards

1 : Okamoto K: Best Oral presentation Award: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons

2 : Sakiko Yamane: Student Poster award: The 34th Annual Meeting of the Japanese Society of Oral

Pathology (Osaka)

3 : Ayako Nakashima: The Second Place Award: 2023 JDA Student Clinician Research Program

(6) Patents

1 : Shiba F, Bono H, Tamura K, Miyauchi M: Patent for oral inflammation control (Application No. 2023-097198) (Applicant: Hiroshima University, Earth Corporation)

2 : Shiba F, Bono H, Tamura K, Miyauchi M: Patent for oral inflammation control (Application No. 2023-097197) (Applicant: Hiroshima University, Earth Corporation)

3 : Shiba F, Asai R, Miyauchi M: Patent for oral inflammation control (Application No. 2023-142274) (Applicant: Hiroshima University, Earth Corporation)

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(1) Staff and Students

Professor: Hitoshi Komatsuzawa
Associate Professor: Miki Matsuo
Assistant Professor: Le Nguyen Tra Mi
Researcher: Keiko Tsuruda, Ikue Hayashi
Graduate Student: Yoshimasa Yasutomi

(2) Main Research Activities

1: Isolation and characterization of drug-resistant bacteria
2: Elucidation of virulence and drug resistance factors of pathogenic bacteria
3: Search for novel antimicrobial susceptibility factors
4: Elucidation of the mechanisms of oral microbiome formation
5: Bacteriophage research

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Isolation of *Streptococcus mutans* temperate bacteriophage with broad killing activity to S. mutans clinical isolates. Sugai K, Kawada-cIwan (M,)-1 (H-4 (u))1.1 (g.9 (aT)58.8 (ln-2.3i).51 Tm)21 M,iaug(u3.1 (20l (u)-48

D) Other Publications

E) Presentations at Scientific Meetings

1: Complete sequences of bacteriocin plasmids of *S. epidermidis* and their antibacterial activity: Miki Matsuo, Mi Nguyen-Tra Le, Junzo Hisatsune, Motoyuki Sugai, Hitoshi Komatsuzawa: The 95th Annual Meeting of Japanese Society for Bacteriology (Tokyo), 2022.

2: Analysis of antimicrobial susceptibility and drug resistance genes of Enterococci. Ayumi Fujii1, Miki Matsuo, Kanako Masuda, Junzo Hisatsune, Kayoko Tadera, Seiya Kashiyama, Michiya Yokozaki, Tomonao Aikawa, Hiroki Ohge, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

3: Isolation and characterization of drug-resistant bacteria from nasal and oral cavities. Tomoki Kawayanagi, Miki Matsuo, Mi Nguyen Tra Le, Toru, Takeshita, Junzo Hisatsune, Satoru Kusaka, Ryota Nomura, Hideki Shiba2, Motoyuki Sugai, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

4: Different CprABC aminoacid sequences affect nisinA susceptibility in Clostridioides difficile. Noriaki Ide, Miki Matsuo, Mi Nguyen Tra Le, Junzo Hisatsune, Toshinori Hara, Seiya Kashiyama, Michiya Yokozaki, Hiroki Ohge, Motoyuki Sugai, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

5: Comprehensive analysis of bacteriocins produced by Klebsiella pneumoniae complex. Mi Nguyen-Tra Le1, Thao Huu-Huong Nguyen, Tam Phuc-Bao Nguyen, Van Minh Trinh, Miki Matsuo, Shizuo Kayama, Motoyuki Sugai, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

6: A Novel Bacteriocin Resistance Mechanism Mediated by Cell Surface Charge in Staphylococcus aureus. Yujin Suzuki, Miki Kawada-Matsuo, Mi Nguyen Tra Le, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

7: Disinfectant Susceptibility of Oral Cephalosporin/Carbapenem-Resistant Gram-Negative Bacteria Azusa Haruta, Miki Kawada-Matsuo, Mineka Yoshikawa, Maho Takeuchi, Mi Le Nguyen Tra, You Sugawara, Toshiki Kajihara, Hiroki Ohge, Kazuhiro Tsuga, Hitoshi Komatsuzawa: The 96th Annual Meeting of Japanese Society for Bacteriology (Himeji), 2023.

8: Analysis of two ABC transporters responsible for Nukacin resistance.Naoki Sadaoka, Miki Matsuo, NGUYEN TRA MI LE, Hideki Shiba, Hitoshi Komatsuzawa: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo) , 2023

9: Analysis of the susceptibility to antibacterial agents and the genes responsible for vancomycin resistance in Enterococcus isolates from inpatients at Hiroshima University Hospital. Ayumi Fujii, Miki Matsuo, Le Nguyen Tra Mi, Hitoshi Komatsuzawa: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo) , 2023

10: Isolation of bacteriophage which shows antibacterial activity against *Streptococcus mutans*. Katsuhito Sugai, Miki Matsuo, Le-Nguyen-Tra Mi, Hitoshi Komatsuzawa: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo) , 2023

11: Isolation and characterization of drug resistant bacteria isolated from oral and nasal cavity. Tomoaki Kawayanagi, Miki Matsuo, Le Nguyen-Tra Mi, Mikari Asakawa, Toru Takeshita, Hideki Shiba, Hitoshi Komatsuzawa: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo) , 2023

12: Analysis of bacteriocin Pep5 from Staphylococcus epidermidis and validation of Pep5 resistance factors via bacterial surface charge in *Staphylococcus aureus*. Yujin Suzuki, Miki Matsuo, Mi Nguyen-Tra Le, Hitoshi Komatsuzaw: The 66th Japan Staphylococcal Conference (Sendai), 2023

F) Special lectures in academic meetings

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Japan Agency for Medical Research and Development (AMED): Miki Kawada-Matsuo, Research and development on inhibition of the establishment of drug-resistant bacteria in the oral and respiratory tracts., 23fk0108606h0001, 7,500

2: Grant-in-Aid for Scientific Research (C)　Miki Kawada-Matsuo: Fundamental research to establish

a risk diagnostic method for oral-derived highly multidrug-resistant *Staphylococcus aureus* 21K09858 1,430

3: Le Nguyen Tra Mi, Grant-in-Aid for Early-Career Scientists from the Ministry of Education, Culture, Sports, Sciences, and Technology of Japan. Temperature-driven regulation system of hypermucoviscosity in carbapenem-resistant *Klebsiella pneumoniae*. Grant No. 21K16947. 1,430

4: Grant-in-Aid for Scientific Research (B) Hitoshi Komatsuzawa: Involvement of Bacteriophages in the Formation of Oral Bacterial Flora by Phageome Analysis. 23H03074 5,720

(5) Academic Awards, etc.

(6) Patents

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(1) Staff and Students

Professor: Yukio Ago
Assistant Professor: Satoshi Asano
Graduate Student: Eiji Imado (Dental Anesthesiology) (~March)
Kohei Jino

2: Ago Y, Asano S. A new method for assessing depressive-like behaviors in female mice. 158(1): 35 38, 2023.
3: Ago Y, Asano S, Sakamoto K. Development of the vasoactive intestinal peptide receptor 2 (VIPR2) antagonist peptide for the treatment of schizophrenia. 158(3): 242 245, 2023.

C) Publications

None

D) Other Publications

None

E) Presentations at Scientific Meetings

International conference

1: Kana Oue, Yusuke Morioka, Eiji Imado, Tetsuya Tamura, Yosuke Yamawaki, Kazuhisa Ouhara, Mitsuhiro Yoshida, Takashi Kanematsu, Yukio Ago. Periodontal infection in diet-induced obesity causes cognitive impairment associated with microglial activation. IAGG Asia-Oceania Regional Congress 2023, Yokohama, June
2: Yukio Ago, Allan J. MacKenzie-Graham, Hitoshi Hashimoto, James A. Waschek. Overexpression of VPAC2 receptors in the embryonic mouse central nervous system causes brain atrophy, increased white matter, and impaired sensorimotor gating. The 8th Congress of the Asian College of Neuropsychopharmacology (AsCNP), Xi'an, China, September 22 24, 2023.
3: Tomoya Takemoto, Kohei Kitagawa, Kazuki Nagayasu, Kaoru Seiriki, Atsuko Hayata-Takano, Atsushi Kasai, Yukio Ago, Kazuhiro Takuma, Daisuke Mori, Norio Ozaki, Ryota Hashimoto, Hitoshi Hashimoto, Takanobu Nakazawa. Oxytocin restores abnormal social behavior in a mouse model of 3q29 microdeletion. The 53rd Annual Meeting of the Society for Neuroscience (Neuroscience 2023), Washington, D.C., USA, November 11 15, 2023.
4: Rei Yokoyama, Yukio Ago, Masato Tanuma, Yuto Shimazaki, Kaoru Seiriki, Takanobu Nakazawa, Kenji Hashimoto, Atsushi Kasai, Hitoshi Hashimoto. (R)-ketamine enhances anterior insular cortex activity associated with social cognition. The 53rd Annual Meeting of the Society for Neuroscience (Neuroscience 2023), Washington, D.C., USA, November 11 15, 2023.
5: Hiroki Ueno, Yusuke Iyanaga, Yuta Hara, Jin Ohkubo, Yuka Nakai, Kaoru Seiriki, Shun Yamaguchi, Yukio Ago, Kazuhiro Takuma, Hitoshi Hashimoto, Atsushi Kasai. Network centralities of prefrontal and somatosensory cortices are decreased in a mouse model of developmental disorders. The 53rd Annual Meeting of the Society for Neuroscience (Neuroscience 2023), Washington, D.C., USA, November 11 15, 2023.

Domestic conference

1: Yukio Ago, Mei Yamada, Tatsunori Miyaoka, Lu Chen, Kenji Ishimoto, Nobumasa Hino, Shinsaku Nakagawa, Kotaro Sakamoto, Satoshi Asano. Development of mid-size molecule inhibitors of VIPR2 for the treatment of psychiatric disorders. The 143rd Annual Meeting of the Pharmaceutical Society for Japan, Sapporo, March 25 28, 2023.
2: Tomoya Takemoto, Masayuki Baba, Kohei Kitagawa, Kazuki Nagayasu, Kaoru Seiriki, Atsuko Hayata, Atsushi Kasai, Yukio Ago, Kazuhiro Takuma, Ryota Hashimoto, Hitoshi Hashimoto, Takanobu Nakazawa. Oxytocin ameliorates impaired social behavior in a mouse model of 3q29 deletion syndrome. The 143rd Annual Meeting of the Pharmaceutical Society for Japan, Sapporo, March 25 28, 2023.
3: Ami Ono, Daichi Koan, Tatsunori Miyaoka, Satoshi Asano, Shinsaku Nakagawa, James A. Waschek, Kotaro Tanimoto, Yukio Ago. Role of the VPAC2 receptor overactivation implicated in schizophrenia susceptibility. The 56th Annual Meeting of the Hiroshima University Dental Society, Hiroshima, Jun 3, 2023.
4: Yukio Ago, Allan J. MacKenzie-Graham, Hitoshi Hashimoto, James A. Waschek. Overexpression of

pain sensitivity. The 44th Annual Scientific Meeting of the Japanese Society of Clinical Pharmacology and Therapeutics, Kobe, December 14 16, 2023.

F) Symposium and Special lectures in academic meetings

1: Yukio Ago. Regulation of cancer migration by VIP VPAC2 receptor signaling. Okinawa Institute of Science and Technology (OIST) lecture, Okinawa, February 15, 2023.
2: Yukio Ago. VIPR2 copy number variants as a risk factor for schizophrenia. Okinawa Institute of Science and Technology (OIST) seminar, Okinawa, February 15, 2023.
3: Yukio Ago. Challenges and new directions for drug discovery in the pharmacological treatment of schizophrenia. Special lecture: School of Pharmaceutical Sciences, Wakayama Medical University, Wakayama, May 15, 2023.
4: Yukio Ago. Role of the brain opioid system in regulation of social behavior. Joint conference of the 64th Annual Meeting of the Japanese Society of Neuropathology and the 66th Annual Meeting of the Japanese Society for Neurochemistry, Kobe, July 6 8, 2023.
5: Yukio Ago. How Drugs Affect the Brain and Mind. Special lecture: Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, July 24, 2023.
6: Yukio Ago. New possibilities for low-dose opioids – the role of -receptors in regulating social behavior. The 42nd Annual Meeting of Japanese Narcotics Research Conference, Tokyo, September 2 3, 2023.
7: Yukio Ago. Novel drug target molecules for schizophrenia: de

6: Grant-in-Aid for Scientific Research (C) from Japan Society for the Promotion of Science (JSPS): Satoshi Asano (Principal Investigator, New), Grant Number: 23K09138
7: Collaborative Research Grant from Mitsui Norin Co., Ltd. (Japan): Yukio Ago (Principal Investigator, New)
8: Collaborative Research Grant from ICHIMARU PHARCOS Co., Ltd. (Japan): Yukio Ago (Principal Investigator, Continuance)
9: Research Grant from the Hiroshima University Fund “Nozomi H Foundation” subsidy for the promotion of cancer treatment research (Japan): Satoshi Asano (Principal Investigator, New)

(5) Academic Awards

1: Ami Ono: Young Investigator Award of the Hiroshima University Dental Society. The 56th Annual Meeting of the Hiroshima University Dental Society, Hiroshima, Jun 3, 2023.
2: Yukio Ago: TSBPN-JSNP Academic Exchange Award. Taiwanase Society of Biological Psychiatry and Neuropsychopharmacology (TSBPN) 2023 Annual Meeting, September 16, 2023.
3: Yukio Ago: Best Poster Award. The 8th Congress of the Asian College of Neuropsychopharmacology (AsCNP), September 23, 2023.

(6) Patents

1: Yukio Ago, Satoshi Asano, Kotaro Sakamoto: VIPR2 antagonist peptide for suppressing cancer metastasis (Patent Number: P7339471, Registration date: August 28, 2023) (Names of Applicants: Hiroshima University, Ichimaru Pharcos Co. Ltd.)
2: Kotaro Sakamoto, Eijiro Miyako, Yukio Ago, Shinsaku Nakagawa: Compositions (Japanese Patent Application Number: #2023-223187, Application date: December 28, 2023) (Names of Applicants: Ichimaru Pharcos Co. Ltd., Japan Advanced Institute of Science and Technology, Hiroshima University, Osaka University)

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(1) Staff and Students

Professor:	Koichi Kato
Assistant Professor:	Isao Hirata, Archana Mootha
Research Collaborator:	Ayana Nakano
Graduate Student:	Fumika Abe, Karina Erda, Yenny Yustisia, Hengky Ardhiyanto
	Shiina Pasanen, Tamamo Matsuyama, Shiina Pasanen
Undergraduate student:	Kanta Asano, Hinami Miyashita, Fumino Futami, Airi Kato, Indira Widyantoro

(2) Main Research Activities

1: Biomaterials and biodevices for regenerative medicine
2:

(December 2–4, 2024, Sura0.924 era0.924) Tc 0 Tw 4.711 0 04[(S)-4ETEMC BT/ AMCID 2 BD6 0 g/TTc -0.015 Tw 3.518

(1) Staffs and Students

Professor: Noriyoshi Mizuno

: Kazuhisa Ouhara,
Tomoyuki Iwata (August-), Shinji Matsuda (August-)

: Shinya Sasaki, Yuta Hamamoto

Assistant Professor (Special Appointment): Yuri Taniguchi

Resident: Mizuho Kittaka (studying abroad), Misako Tari, Tetsuya Tamura, Ai Okanobu (-July), Tasuku Takemura (-August), Takumi Memida (-July), Hisakatsu Sone (January)

Graduate Student: Shin Morimoto, Hiroki Yoshii, Mai Yoshino, Tomoya Ueda, Shoko Kohno, Fuminori Nakashima, Yurika Ninomiya, Ryousuke Fujimori, Keisuke Yasuda

Research Student: Masahiko Suzukawa

Clinical Trainee: Mari Kiyota, Yoshiaki Shimasaki, Manabu Takewaki, Takuma Yanagihara, Keita Takahashi, Naoya Kubo, Saki Hatano, Tomoya Ogawa, Kazuma Suzuki, Tomose Ogawa, Takuma Tagashira

(2) Main Research Activities

1: Immunological and genetic study on the onset of periodontics
2: Study on periodontal tissue regeneration using bone marrow mesenchymal stem cells
3: Study on periodontal tissue regeneration using neurotrophins
4. Study on the relationship between periodontal disease and
5. Study on the relationship between periodontal disease and
6: Study on physiological function and differentiation of the cells derived from periodontal ligament
7: Study on prevention for periodontal disease
8: Study on
9: Study on the relationship between periodontal disease and
10: Study on the establishment of treatment methods for peri-implantitis

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Relationship Between Periodontitis and Atrial Fibrosis in Atrial Fibrillation: Histological Evaluation of Left Atrial Appendages
Miyauchi S, Nishi H, Ouhara K, Tokuyama T, Okubo Y, Okamura S, Miyamoto S, Oguri N, Uotani Y, Takasakio T, Katayama K, Furusho H, Miyauchi M, Takahashi S, Hiyama T, Nakano Y
JACC Clin Electrophysiol. 2023; January; 9 (1); 43-53

2: Regulation of osteogenesis in bone marrow-derived mesenchymal stem cells via histone deacetylase 1 and 2 co-cultured with human gingival fibroblasts and periodontal ligament cells.
Iwata T, Kaneda-Ikeda E, Takahashi K, Takeda K, Nagahara T, Kajiya M, Sasaki S, Ishida S, Yoshioka M, Matsuda S, Ouhara K, Fujita T, Kurihara H, Mizuno N
J Periodontal Res. 2023; February; 58 (1); 83-96

3: Extracellular Release of Citrullinated Vimentin Directly Acts on Osteoclasts to Promote Bone Resorption in a Mouse Model of Periodontitis.
Shindo S, Pierrelus R, Ikeda A, Nakamura S, Heidari A, Pastore MR, Leon E, Ruiz S, Chheda H, Khatiwala R, Kumagai T, Tolson G, Elderbashy I, Ouhara K, Han X, Hernandez M, Vardar-Sengul S, Shiba H, Kawai T
Cells. 2023; April; 8;12(8); 1109

4: In Situ Raman Analysis of Biofilm Exopolysaccharides Formed in Streptococcus mutans and Streptococcus sanguinis Commensal Cultures

Pezzotti G, Ofuji S, Imamura H, Adachi T, Yamamoto T, Kanamura N, Ohgitani E, Marin E, Zhu W, Mazda O, Togo A, Kimura S, Iwata T, Shiba H, Ouhara K, Aoki T, Kawai T
Int J Mol Sci. 2023; April; 3;24(7); 6694

5: A Cartilaginous Construct with Bone Collar Exerts Bone-Regenerative Property Via Rapid Endochondral Ossification.
Morimoto S, Kajiya M, Yoshii H, Yoshino M, Horikoshi S, Motoike S, Iwata T, Ouhara K, Ando T, Yoshimoto T, Shintani T, Mizuno N
Stem Cell Reviews and Reports. 2023; May; 19 (6); 1812-1827

6: Distinctive Biological Properties Between Mesenchymal Stem Cells Spheroids and Clumps of Mesenchymal Stem Cells/Extracellular Matrix Complexes in 3D Culture Systems
Yoshino M, Kajiya M, Yoshii H, Morimoto S, Horikoshi S, Tari M, Iwata T, Ouhara K, Ando T, Yoshimoto T, Shintani T, Mizuno N
Applied Sciences. 2023; November; 13 (23); 12790

7: Relationship between CD4+ T-cell counts at baseline and initial periodontal treatment efficacy in patients undergoing treatment for HIV infection: A retrospective observational study.
Shintani T, Okada M, Iwata T, Kawagoe M, Yamasaki N, Inoue T, Nakanishi J, Furutama D, Takeda K, Ando T, Nakaoka M, Mizuno N, Fujii T, Kajiya M, Shiba H.
J Clin Periodontol. 2023; November; 50 (11); 1520-1529.

8: Effect of Periodontal Treatment on Reducing Chronic Inflammation in Systemically Healthy Patients with Periodontal Disease
Matsuda S, Shintani T, Miyagawa T, Yumoto H, Komatsu Y, Dewake N, Iwata T, Nagano T, Morozumi T, Goto R, Kato S, Kitamura M, Shin K, Sekino S, Yamashita A, Yamashita K,
Yoshimura A, Sugaya T, Takashiba S, Taguchi Y, Nemoto E, Nishi H, Mizuno N, Numabe Y, Kawaguchi H
The American Journal of Medicine. 2023; November; 19: S0002-9343(23)00706-4.; in press

9: Periostin regulates integrin expression in gingival epithelial cells.
Hirata R, Iwata T, Fujita T, Nagahara T, Matsuda S, Sasaki S, Taniguchi Y, Hamamoto Y,
Ouhara K, Kudo Y, Kurihara H, Mizuno N
J Oral Biosci. 2023; December; 2:S1349-0079(23)00190-1; Online ahead of print.

10: N-glycan in the variable region of monoclonal ACPA (CCP-Ab1) promotes the exacerbation of experimental arthritis.
Kawataka M, Ouhara K, Kobayashi E, Shinoda K, Tobe K, Fujimori R, Mizuno N, Sugiyama E, Ozawa T, Kishi H
Rheumatology (Oxford). 2023; December; 1;62(12); 3968-3977.

11: Mechanosignaling YAP/TAZ-TEAD axis regulates the immunomodulatory properties of mesenchymal stem cells.
Yoshii H, Kajiya K, Yoshino M, Morimoto S, Horikoshi S, Tari M, Motoike S, Iwata T, Ouhara K, Ando T, Yoshimoto T, Shintani T, Mizuno N
Stem Cell Reviews and Reports. 2023; November; Online ahead of print.

12: Increasing the Apical Sizes of Root Enlarged for Root Canal Obturation Influences the Outcome of Single-Root-Canal Teeth Affected by Apical Periodontitis
Hirata-Tsuchiya S, Furutama D, Saito-Nakayama N, Naruse T, Kawayanagi T, Nishihama S, Miyata A, Shirawachi S, Sadaoka N, Wang C, Yoshida K, Nakanishi J, Matsuda S, Takeda K, Shiba H
European Endodontic Journal. 2023; ahead of print

B) Review

C) Publications

1. Risk Factors for Periodontal Disease; 4. Specifics of risk factors
Noriyoshi Mizuno, Kazuhisa Ouhara, Tomoyuki Iwata
The Periodontology 4th edition (Nagasue Shoten Inc.) 2023; February; p.40-41/48-50

D) Other Publications

1. Relationship between oral helth care and blood pressure
Shinji Matsuda, Noriyoshi Mizuno

COCORO vol.3 2023 Spring (Japanese Circulation Association) 2023; March; p.12

E) Presentation at Scientific Meeting

1. YAP/TAZ mechanosignaling regulates cytoprotective factors production in mesenchymal stem cells
   Hiroki Yoshii, Mai Yoshino, Mikihito Kajiya
   The 22nd Annual Meeting of the Japanese Society for Regenerative Medicine (2023 March, Kyoto)
2. The development of a bone marrow adipose tissue-like in vitro model using clumps of MSCs/ECM complexes.
   Mai Yoshino, Yoshii Hiroki, Mikihito Kajiya
   The 22nd Annual Meeting of the Japanese Society for Regenerative Medicine (2023 March, Kyoto)
3. Identification of new periodontal examination to evaluate the association between periodontitis and systemic diseases multi centered clinical study 2ndreport.
   Shinji Matsuda Tsutomu Sugaya Satsuki Kato Eiji Nemoto Yasuo Takeuchi Keiko Yamashita Yukihiro Numabe Tetsuya Nishida Yorimasa Ogata Kitetsu Shin Takatoshi Nagano Toshiya Morozumi Yasutaka Komatsu Nanae Dewake Ryoma Goto Masahiro Kitamura Yoichiro Taguchi Shogo Takashiba Hiromichi Yumoto Akiko Yamashita Yasunori Yoshinaga Atsutoshi Yoshimura Hiroyuki Kawaguchi
   The 66th Spring Meeting of Japanese Society of Periodontology (2023 May, Takamatsu)
4. Anti-Inflammatory effects of Geniposidic acid on Porphyromonas gingivalis-induced periodontitis in mice
   Tetsuya Tamura, Kazuhisa Ouhara, Tasuku Takemura, Yuri Taniguchi, Yuta Hamamoto, Ryousuke Fujimori, Mikihito Kajiya, Shinji Matsuda, Noriyoshi Mizuno
   The 66th Spring Meeting of Japanese Society of Periodontology (2023 May, Takamatsu)
5. Transplantation of clumps of MSCs / ECM complexes treated with chondrogenic / osteogenic induction promotes bone regeneration via endochondral ossification manner
   Shin Morimoto, Mikihito Kajiya, Susumu Horikoshi, Hiroki Yoshii, Mai Yoshino, Noriyoshi Mizuno
   The 56th Annual Meeting of Hiroshima University Dental Society (2023 June, Hiroshima)
6. YAP/TAZ mechanosignaling regulates cytoprotective factors production in mesenchymal stem cells
   Hiroki Yoshii, Mikihito Kajiya, Shin Morimoto, Mai Yoshino, Noriyoshi Mizuno
   The 56th Annual Meeting of Hiroshima University Dental Society (2023 June, Hiroshima)
7. The development of a bone marrow adipose tissue-like in vitro model using clumps of MSCs/ECM complexes.
   Mai Yoshino, Mikihito Kajiya, Shin Morimoto, Hiroki Yoshii, Noriyoshi Mizuno
   The 56th Annual Meeting of Hiroshima University Dental Society (2023 June, Hiroshima)
8. The development of a bone marrow adipose tissue-like in vitro model using clumps of MSCs/ECM complexes.
   Mai Yoshino, Mikihito Kajiya, Tetsuya Yoshimoto, Shin Morimoto, Tomoyuki Iwata,
   Noriyoshi Mizuno
   The 41st Annual Meeting of the Japanese Society for Bone and Mineral Research (2023 July, Tokyo)
9. Evaluation of the Effect of Dietary Iron Deficiency on the Development of Osteonecro Otifse (ve)41 (e)-J5.3 5(tio)1 (t)w0 T

Tetsuya Yoshimoto, Noriyoshi Mizuno
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)

13. The development of a bone marrow adipose tissue-like in vitro model using clumps of MSCs/ECM complexes.
Mai Yoshino, Mikihito Kajiya, Shin Morimoto, Hiroki Yoshii, Tetsuya Yoshimoto, Sususmu Horikoshi, Misako Tari, Tomoyuki Iwata, Kazuhisa Ouhara, Shinji Matsuda, Shinya Sasaki, Yuta Hamamoto, Yuri Taniguchi, Noriyoshi Mizuno
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)
14. Promotion of reosseointegration by brain-derived neurotrophic factor (BDNF) in canine peri-implantitis model
Shoko Kono, Shinya Sasaki, Katsuhiro Takeda, Shinji Matsuda, Tomoyuki Iwata, Kazuhisa Ouhara, Noriyoshi Mizuno
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)
15. Ligature-induced periodontitis exacerbates non-alcoholic fatty liver irrelevant to gluocse intolerance or obesity
Misako Tari, Mikihito Kajiya, Tomoyuki Iwata, Kazuhisa Ouhara, Shinji Matsuda, Shinya Sasaki, Noriyoshi Mizuno
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)
16. Masticatory dysfunction in patients with diabetic neuropathy
Yuta Hamamoto, Kazuhisa Ouhara, Tsuyoshi Miyagawa, Mikihito Kajiya, Shinji Matsuda, Shinya Sasaki, Tomoyuki Iwata, Noriyoshi Mizuno
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)
17. Efficacy of Periodontal Disease Screening Assessment using the Oral Bacteria Detection Device Orcoa
Sora Tanaka, Shinya Sasaki, Honoka Maeda, Reiko Aimi, Noriyoshi Mizuno, Hiroki Nikawa
The 61th Autumn Annual Meeting of the Japanese Society of Periodontology (2023 October, Nagasaki)
18. Elucidation of the mechanism of periodontal disease suppression by anti-IL-6 receptor antibodies in a mouse model of P. gingivalis infection
Ryousuke Fujimori, Kazuhisa Ouhara, Noriyoshi Mizuno
7th JSMID and 1st COMID 2023 (2023 November, Surabaya, Indonesia)
19. Evaluation of oral function and oral environment in hemophilia patients taking anti-HIV drugs

M. Okada, T. Shintani, M. Kawagoe, T. Iwata, N. Yamazaki, T. Fujii, H. Shiba
The 37th Annual Meeting of the Japanese Society for AIDS Reaserch (2023 December, Kyoto)

F) Special lectures in academic meetings

1. keynote speech
Reconsidering aggressive periodontitis - What we know and what we don't know -
Noriyoshi Mizuno
FY2023 Japanese Society of Periodontology Chugoku-Shikoku 3-Universities and Japanese Society of Clinical Periodontology Chugoku-Shikoku Branch Joint Training Session (2023 September, Hiroshima)
2. Symposium
Oral infection (periodontal disease, peri-implantitis) and Systemic Disease
Kazuhisa Ouhara
7th JSMID and 1st COMID 2023 (2023 November, Surabaya, Indonesia)

(4) Status of Receiving Grants-in Aid for Scientific Research.

1. Grants-in aid for scientific research C: Noriyoshi Mizuno: 22K10000
2. Grants-in aid for scientific research C: Kazuhisa Ouhara: 22K09983
3. Grants-in aid for scientific research C: Ai Okanobu: 22K10001
4. Grant-in-Aid for Early-Career Scientists: Yuta Hamamoto: 23K16227
5. Grant-in-Aid for Early-Career Scientists: Saki Hatano: 23K15973
6. Grant-in-Aid for Early-Career Scientists: Takumi Memida: 23K16001
7. Grant-in-Aid for Early-Career Scientists: Shinya Sasaki: 22K17092
8. Grant-in-Aid for Early-Career Scientists: Misako Tari: 22K17039
9. Grants-in aid for Research Activity Start-up: Yuri Taniguchi: 23K19692

10. Grants-in aid for Research Activity Start-up: Tetsuya Tamura: 23K19718
11. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Mai Yoshino
12. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Tomoya Ueda
13. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yurika Ninomiya
14. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Fuminori Nakashima
15. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Shoko Kohno
16. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Ryousuke Fujimori
17. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Keisuke Yasuda

(5) Award.

1. Ryousuke Fujimori
   2nd Runner-Up prize of E-Poster Presentation in 7th JSMID and 1st COMID 2023
   Elucidation of the mechanism of periodontal disease suppression by anti-IL-6 receptor antibodies in a mouse model of P. gingivalis infection
2. Mai Yoshino
   The 56th Annual Academic Meeting Encouragement Award of the Hiroshima University School of Dentistry
   The development of a bone marrow adipose tissue-like in vitro model using clumps of MSCs/ECM complexes.
3. Takayoshi Nagahara
   The Japanese Society of Conservative Dentistry. 2022 Certified Dentist Excellent Case Presentation Award
   Comprehensive dental treatment for a patient with cryptogenic arthritis.

(6) Patents

1. Mikihito Kajiya, Hiroki Yoshii, Mai Yoshino / Toshihiko Maekawa, Yoko Torii, Harumi Takai
   Periodontal tissue regeneration material
   (Patent Number: 2023-45232)
   (Patent applicant: Hiroshima University/CYFUSE BIOMEDICAL K.K.)
2. Shinji Matsuda, Noriyoshi Mizuno
   Treatment drug for Drug-induced gingival hyperplasia
   (Patent Number: 2023-077438)
   (Patent applicant: Hiroshima University)
3. Shinya Sasaki, Shoko Kohno, Katsuhiro Takeda, Hidemi Kurihara, Noriyoshi Mizuno
   Pharmaceutical composition and implant body for treating or preventing the area around implants
   (Patent Number: 2023-102953)
   (Patent applicant: Hiroshima University)

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(1) Staff and Students

Professor: Souichi Yanamoto * Chief: Souichi Yanamoto (by-work)
Associate Professor:
Associate Professor/Lecturer: Yasutaka Hayashido (~May)
Assistant Professor: Ryouji Tani, Yukio Yoshioka, Koichi Koizumi, Kensaku Sumi, Tomoaki Hamana (~August), Sachiko Yamasaki, Atsuko Hamada, Fumitaka Obayashi (September~), Mirai Higaki
Resident: Naohiro Kimura (~March), Nanako Ito, Yuki Taguchi (~March), Fumitaka Obayashi (~August), Taeko Fukutani (~November), Takefumi Mishima (~March), Yasutaka Ishida (April~), Tadayoshi Nobumoto (April~), Seiya Hayashi (September~)
Clinical Trainee: Yoshinari Myoken, Yoshinori Fujita, Yasutaka Ishida(~Mar), Yoku Ito(~Mar), Erika Yamasaki (~May), Takefumi Mishima(March~)
Graduate Student: Hideaki Takahashi(~May), Kento Okamoto, Natsuki Eboshida, Tamamo Matsuyama, Asada April~ Yume Ueda April~ Teru Uehara April~ Airi Odawara April~ Erika Yamasaki April~
Researcher: Taku Kanda, Shigeru Sakurai, Tadayoshi Nobumoto (~Mar), Yuki Taguchi April~ , Tomoaki Hamana (September~), Taeko Fukutani December~)

(2) Main Research Activities

1: Multi-institutional clinical research to establish EBM for oral cancer treatment
2: Analysis of circulating tumor cells and cfDNA in oral cancer
3: Study on development of the remote-controllable dental chair
4: The intestinal and oral microflora of patients with oral câncer

(3) Research Achievements

A) Original Papers (including Case Reports)

1: A case of multiple myeloma diagnosed by extramedullary disease in the submandibular region: Koizumi K, Sakaue T, Nakase Y, Obayashi F, Ando T, Shintani T, Yanamoto S.: J Oral Maxillofac Surg Med Pathol, 35(3), 247-250, 2023.
2: A case of primary neuroendocrine carcinoma of the mandibular gingiva treated using multimodal therapy: Hamana T, Sakurai S, Hamada A, Sakamoto S, Furusho H, Toratani S.: J Oral Maxillofac Surg Med Pathol, 35(1), 60-66, 2023.
3: Secretory carcinoma of the minor salivary gland in the lip with ETV6-NTRK3 fusion: case report and literature review: Hamada A, Tani R, Kimura N, Taguchia Y, Hirota S, Ando T, Okamoto K, Toratani S, Yanamoto S.: J Oral Maxillofac Surg Med Pathol, 35(3), 251-257, 2023.
4: Successful orthognathic surgery in a patient with severe congenital neutropenia: Higaki M, Koizumi K, Hirota S, Yanamoto S.: J Oral Maxillofac Surg Med Pathol, 35(5), 464-467, 2023.
5: Tumor-infiltrating CD45RO+ memory cells are associated with favorable prognosis in oral squamous cell carcinoma patients: Ito N, Yamasaki S, Shintani T, Matsui K, Obayashi F, Koizumi K, Tani R, Yanamoto S, Okamoto T.: Cancers, 15(8), 2221, 2023.
6: Primary intraosseous carcinoma complicated by cervical hodgkin lymphoma: a rare case report: Obayashi F, Koizumi K, Ito N, Higaki M, Ando T, Yoshioka Y, Yanamoto S.: J Oral Maxillofac Surg Med Pathol, 36(1), 38-43, 2023.
7: Neutrophil-to-lymphocyte ratio as an early marker of outcomes in patients with recurrent oral squamous cell carcinoma treated with Nivolumab: Tachinami H, Tomihara K, Yamada S, Ikeda A, Imaue S, Hirai H, Nakai H, Sonoda T, Kurohara K, Yoshioka Y, Hasegawa T, Naruse T, Niiyama

T, Shimane T, Ueda M, Yanamoto S, Akashi M, Umeda M, Kurita H, Miyazaki A, Arai N, Hayashi R, Noguchi M.: Br J Oral Maxillofac Surg, 61(4), 320-326, 2023.

8: Suspected metal allergy manifesting as exacerbation of palmoplantar pustulosis after surgery for jaw deformity: a case report: Obayashi F, Koizumi K, Ito N, Obayashi N, Shintani T, Kajiya M, Yanamoto S.: Dent J, 11(11), 257, 2023.

9: Clinical efficacy and safety of lidocaine tape for topical anesthesia of the oral mucosa: a preliminary controlled trial: Tani R, Yamasaki S, Hamada A, Higaki M, Asada Y, Yanamoto S.: Dent J, 11(12), 276, 2023.

10: Surgical treatment and prognosis of posteriorly invading oral cancer: potential clinical significance of pterygomandibular raphe: Otsuru M, Yanamoto S, Naruse T, Omori K, Morishita K, Sumi M, Umeda M.: J Dent Sci, 18(1), 81-86, 2023.

11: A multicenter study on the effect of margin distance on survival and local control in Stage 1-2 squamous cell carcinoma of the tongue: Otsuru M, Hasegawa T, Yamakawa N, Okura M, Yamada S, Hirai E, Inomata T, Saito H, Miura K, Furukawa K, Naruse T, Yanamoto S, Umeda M.: Ann Surg Oncol, 30(2), 1158-1166, 2023.

12: Medication-related osteonecrosis of the upper jaw involving the zygomatic bone: a case report: Otsuru M, Soutome S, Hayashida S, Morishita K, Yanamoto S, Umeda M.: Int J Surg Case Rep, 104, 107932, 2023.

13: Radiotherapy plus Cetuximab for squamous cell carcinoma of the oral cavity: a multicener retrospective study of 79 patients in Japan: Otsuru M, Yanamoto S, Yamada S, Nakashiro K, Harazono Y, Kohgo T, Nakamura M, Nomura T, Kasamatsu A, Tanaka S, Kirita T, Kioi M, Ogawa M, Sasaki M, Ota Y, Umeda M.: Int J Environ Res Pub Health, 20(5), 4545, 2023.

14: Comparison of the 8th edition of TNM staging of oral cancer with the 7th edition and its prognostic significance using clinical depth of invasion and extranodal extension: Yokota Y, Hasegawa T, Yamakawa N, Rin S, Otsuru M, Yamada S, Hirai E, Ashikaga Y, Yamamoto K, Ueda M, Kirita T, Umeda M, Akashi M, Kurita H, Ohiro Y, yanamoto S, Okura M.: Oral Oncol, 145, 106519, 2023.

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16: Case of amyloid variant of central odontogenic fibroma with neural involvement.: Ito N, Sakamoto S, Obayashi F, Kanda T.: Int J Oral Maxillofac Surg, 52(10), 1035-1038, 2023.

17: Use of an educational video with mobile technology for the informed consent process: a randomised controlled trial on patients undergoing surgery for an impacted lower third molar: Myoken Y, Kawamoto T, Fujita Y, Tsubahara Y, Toratani S, Yanamoto S, Myoken Y.: Br J Oral Maxillofac Surg, 61(7), 497-502, 2023.

18: Reconstruction using a submental island flap combined with mylohyoid muscle as a reliable surgical strategy after rim mandibulectomy for the management of stage 3 medication-related osteonecrosis of the mandible: Myoken Y, Kawamoto T, Fujita Y, Sakurai S, Toratani S, Yanamoto S.: Int J Oral Maxillofac Surg, 52(7), 753-759, 2023.

19: Evaluation of dental hygiene learning outcomes through smartphone-based educational slides targeting dental hygienists: a pilot study: Myoken Y, Kawamoto T, Nakata M, Fujita Y, Toratani S, Tsubahara Y, Myoken Y. Int J Dent Hyg, 21(3), 541-548, 2023.

20: A case of recurrent lip cancer with middle skull base invasion with response to Cetuximab and Paclitaxel combination chemotherapy after Nivolumab monotherapy: Yamasaki S, Tani R, Yanamoto S.: J Oral Maxillofac Surg Med Pathol, 36(1), 71-76, 2023.

21: AXL activates YAP through the EGFR–LATS1/2 axis and confers resistance to EGFR-targeted drugs in head and neck squamous cell carcinoma: Okamoto K, Ando T, Izumi H, Kobayashi SS, Shintani T, Gutkind JS, Yanamoto S, Miyauchi M, Kajiya M.: Oncogene, 42(39), 2869-2877, 2023.

22: Retrospective study on the therapeutic efficacy of zinc acetate hydrate administration to patients with hypozincemia-induced dysgeusia: Shintani T, Ohta K, Ando T, Hayashido Y, Yanamoto S, Kajiya M, Shiba H.: BMC Oral Health, 23(1): 159, 2023.

23: Resting saliva volume as a risk factor for hypogeusia: a retrospective study: Shintani T, Naito M, Obayashi N, Ando T, Kawaguchi H, Yanamoto S, Kajiya M, Sugita M.: Physiol Behav, 267: 114224, 2023.

24: A case of dentigerous cyst originated from impacted supernumerary malformed tooth with deformity of dens in dente: Hamada A, Koizumi K, Higaki M, Obayashi F, Sakamoto S, Toratani S.: Jpn J Oral Maxillofac Surg, 69(7), 337-340, 2023.

25: Trend survey and case study of oral cancer patients visiting the Department of Oral and

Maxillofacial Surgery at Hiroshima University Hospital: Koizumi K, Eboshida N, Tanigawa A, Obayashi F, Ito N, Higaki M, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: J Hiroshima Univ Dent Soc, 55(1), 9-16, 2023.

26: Mandibular reconstruction with a reconstruction plate and free flap: Nagamatsu S, Koshima I, Koizumi K, Yoshioka Y, Tani R, Yanamoto S, Chikuie N, Taruya T, Hamamoto T, Ueda T.: Jpn J Head Neck Cancer, 49(4), 305-311, 2023.

27: A study on the awareness of dysphagia at Hiroshima Prefectural Hospital: Kanda T, Matsui K, Shimomura S, Ohara K, Kondoh Y, Omachi K, Ueda Y, Ebara H, Murakami A, Terai S, Nakamura N, Kawasaki I, Sagara Y, Iwami H, Sera T, Masuda S.: Med J Hiroshima Pref Hosp, 54(1), 27-34, 2023.

28: A case of chondrolipoma arising in the mental region: Matsui K, Kanda T, Ueda Y, Omachi K, Hattori Y, Kiriyama T.: Jpn J Oral Maxillofac Surg, 69(9), 424-429, 2023.

B) Review

1: Cell-in-cell Structure in Cancer: Evading Strategies from Anti-cancer Therapies: Okuyama K, Fukushima H, Naruse T, Yanamoto S.: Front Oncol, 13, 12480987, 2023.

2: Relationship between Tumor Budding and Partial Epithelial-Mesenchymal Transition in Head and Neck Cancer: Okuyama K, Suzuki K, Yanamoto S.: Cancers, 14(4), 1111, 2023.

3: Oral Bacterial Contributions to Gingival Carcinogenesis and Progression: Okuyama K, Yanamoto S.: Cancer Prev Res, 16(4), 199-209, 2023.

4: Tumor Microenvironmental Modification by the Current Target Therapy for Head and Neck squamous cell carcinoma: Okuyama K, Naruse T, Yanamoto S.: J Experiment Clin Cancer Res, 42(1), 114, 2023.

5: Efficacy of elective neck dissection for clinically node-negative oral tongue squamous cell carcinoma: Yanamoto S, Umeda M, Kurita H, Kirita T.: J Jpn Soc Oral Oncol, 35(3), 83-88, 2023.

C) Publications

1: VI. Reconstruction and Postoperative Functional Recovery, Postoperative Evaluation-4. Mandibular reconstruction; Oral Cancer (Kirita T, Harada H, eds.): Kirita T, Yanamoto S. (Contributors): Ishiyaku Publishers, Inc. (Tokyo), pp.171-208, 2023.

2: V. Infection Management - 4. Prevention of Infectious Streams, 5. Exposure to Blood and Body Fluids (Needle Stick, Incision, Mucous Membrane Exposure); Safety Management Manual for Dentists (Imai Y, Kurita H, eds.): Yanamoto S. (Contributor): Ishiyaku Publishers, Inc. (Tokyo), pp.75-79　2023

D) Other Publications

1: Oral squamous cell carcinoma clinico-radiographically mimicking MRONJ: Myoken Y, Kawamoto T, Fujita Y, Toratani S, Tsubahara Y, Yanamoto S.: Oral Oncol, 145, 106498, 2023.

E) Presentations at Scientific Meetings

1: Symposium 3: “What is the optimal neck dissection for oral cancer?” The spinal accessory and cervical nerve preservation technique　Koizumi K　Eboshida N　Ohbayashi F　Ito N　Higaki M　Hamada A　Yamasaki S　Hamana T　Yoshioka Y　Tani R　Yanamot S.: The 41th Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

2: Workshop 2: “Current status of oral cancer treatment in the super-aging society” Report of the working group on surgical therapy (Resection): Yanamoto S, Yamakawa N, Yamada S, Hasegawa T, Takeda D, Suzuki T, Matsuyama T, Obayashi F, Yamasaki S, Fukutani T, Aoki T.: The 41th Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

3: A case of cervical lymph node metastasis of tongue cancer with internal carotid artery tortuosity: Higaki M, Koizumi K, Matsuyama T, Obayashi F, Ito N, Yanamoto S.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

4: A Study of predictive factors for late lymph node metastasis and distant metastasis in cT1-2N0 tongue cancers: Obayashi F, Koizumi K, Higaki M, Ito N, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

5: Anatomical structures involved in local recurrence in cases treated with surgery for oral squamous

cell carcinoma: Ito N, Koizumi K, Obayashi F, Eboshida N, Mtsuyama T, Okamoto K, Taguchi Y, Higaki M, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

6: Low pretreatment Body Mass Index (underweight) significantly worsens disease-specific mortality in oral squamous cell carcinoma: Okura M, Kurioka K, Ohiro Y, Rin S, Ueda M, Yamada SI, Kurita H, Yamakawa N, Kirita T, Hasegawa T, Yanamoto S, Umeda M, Otsuru M, Hirai E, Yokota Y.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

7: A study of the therapeutic efficacy of nivolumab in oral squamous cell carcinoma and the neutrophil/lymphocyte count ratio: Tachinami H, Tomihara K, Yamada SI, Ikeda A, Imaue S, Nakai H, Kurohara K, Yoshioka Y, Hasegawa T, Naruse T, Niiyama T, Shimane T, Ueda M, Yanamoto S, Akashi M, Umeda M, Kurita H, Miyazaki A, Arai N, Noguchi M.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

8: Clinical practical guidelines for the treatment of oral cancer, 2022 edition. SR18: Is gastrostomy nutrition useful for patients undergoing radiotherapy or chemoradiotherapy?: Suzuki T, Yanamoto S, Saito H, Takeda D, Uzawa N, Kurita H.: The 41st Annual Meeting of Japanese Society of Oral Oncology (Okayama (WEB)), 2023.1.26-1.27.

9: A study on the awareness of dysphagia at Hiroshima Prefectural Hospital: Matsui K, Kanda T, Shimomura S, Ohara K, Kondoh Y, Omachi K, Ueda Y, Ebara H, Murakami A, Terai S, Nakamura N, Kawasaki I, Sagara Y, Iwami H, Sera T, Masuda S.: The 46th Annual Meeting of the Society of Swallowing and Dysphagia of Japan (Nagoya), 2023.3.3-3.4.

10: Research about the circulating tumor cells and circulating cell-free DNA in blood of oral squamous cell carcinoma: Eboshida N, Hamada A, Matsuyama T, Obayashi F, Kimura N, Ito N, Higaki M, Yamasaki S, Koizumi K, Yoshioka Y, Yanamoto S.: The 35th Annual Congress on Oral and Maxillofacial Surgery (Taipei), 2023.3.11-3.12.

11: A study of surgical site infection in patients of advanced oral cancer with free flap reconstruction: Obayashi F, Koizumi K, Higaki M, Ito N, Yoshioka Y, Yanamoto S.: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient. (Karuizawa), 2023.3.18-3.19.

12: A case of lymphoproliferative disorders of the palate in a patient with Crohn's disease treated with infliximab and azathioprine: Ito N, Hamana T, Obayashi F, Yoshioka Y, Yanamoto S.: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient. (Karuizawa), 2023.3.18-3.19.

13: A case of transcatheter aortic valve implantation preceded by subtotal maxillary resection in a patient with maxillary gingival carcinoma with severe aortic valve stenosis: Higaki M, Yoshioka Y, Mishima F, Obayashi F, Ito N, Yamasaki S, Koizumi K, Yanamoto S.: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient. (Karuizawa), 2023.3.18-3.19.

14: Educational Lecture: Dental safety management manual: Yanamoto S.: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient. (Karuizawa), 2023.3.18-3.19.

15: Experience with Cosmofix custom-made plates for mandibular reconstruction: Yoshioka Y, Yamasaki S, Fukutani T, Shinntaku Y, Koizumi K, Aikawa T, Yanamoto S.: The 77th Annual Meeting of Japanese Stomatological Society (Okayama), 2023.5.12-5.13.

16: Study of circulating tumor cells and cell-free DNA in blood in patients with oral squamous cell carcinoma: Eboshida N, Hamada A, Matsuyama T, Obayashi F, Ito N, Higaki M, Yamasaki S, Koizumi K, Yoshioka Y, Yanamoto S.: The 77th Annual Meeting of Japanese Stomatological Society (Okayama), 2023.5.12-5.13.

17: Reconstruction of the mandible by full custom-made titanium plate Cosmofix : Yamasaki S, Yoshioka Y, Fukutani T, Shintaku Y, Koizumi K, Aikawa T, Yanamoto S.: The 56th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2023.6.3.

18: A case of a patient with Sturge-Weber syndrome who underwent orthognathic surgery using the submaxillary extraction technique: Ono S, Koizumi K, Kado I, Ohdo S, Nakagawa T, Uetsuki R, Mizuta K, Tanimoto K, Aikawa N.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (Tokyo), 2023.6.8-6.9.

19: Clinical study of patients using Pembrolizumab in recurrent or metastatic oral cancer: Yoshioka Y, Higaki M, Obayashi F, Ito N, Nakagawa T, Yamasaki S, Hamana T, Ono S, Koizumi K, Aikawa T, Yanamoto S.: The 47th Annual Meeting of the Japan Society for Head and Neck Cancer (Osaka), 2023.6.15-6.16.

20: Usefulness of computer-aided custom-made plate system in mandibular reconstruction: Hamana T, Fukutani T, Yoshioka Y, Matsuyama T, Eboshida N, Obayashi T, Higaki M, Hamada A, Koizumi K, Nagamatsu S, Chikuie N, Hamamoto T, Ueda T, Yanamoto S.: The 47th Annual Meeting of the Japan

Society for Head and Neck Cancer (Osaka), 2023.6.15-6.16.

21: Mandibular reconstruction with a reconstruction plate and free flap: Nagamatsu S, Koshima I, Hnamana T, Yoshioka Y, Koizumi K, Tani R, Yanamoto S, Chikuie N, Taruya T, Hamamoto T, Ueda T: The 47th Annual Meeting of the Japan Society for Head and Neck Cancer (Osaka), 2023.6.15-6.16.

22: A case of mandibular impacted wisdom tooth extraction for a patient with glucose-6-phosphate dehydrogenase (G6PD) deficiency: Ueda Y, Higaki M, Hamana T, Nobumoto T, Ito N, Obayashi T, Yanamoto S.: The 52nd Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Chugoku-Shikoku Branch (Izumo), 2023.7.2.

23: Clinical statistics of metastatic tumors in the oral cavity at the Department of Dentistry and Oral Surgery, Hiroshima Prefectural Hospital.: Matsui K, Sugano D, Omachi K, Ueda Y, Kiriyama T, Kanda T.: The 52nd Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Chugoku-Shikoku Branch (Izumo), 2023.7.2.

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25: Gender Equality Symposium: To continue the practice for a long time, even if it is a small one - three important things-: Ito N, Yamasaki S, Hamada A, Taguchi Y, Fukutani T, Eboshida N, Matsuyama T, Maruko M, Koizumi K, Yanamoto S.: The 1st Young Oral Surgeons Exchange Meeting (Osaka), 2023.7.29-7.30.

26: Deciphering the mechanism of cancer immune evasion induced by disruption of the Hippo pathway: Ando T, Okamoto K, Yanamoto S, Miyauchi M, Kajiya M.: The 34th Annual Meeting of the Japanese Society of Oral Pathology (Osaka), 2023.8.24-8.26.

27: YAP/TAZ confers resistance against splicing inhibitors in head and neck squamous cell carcinoma: Ando T, Okamoto K, Shintani T, Yanamoto S, Miyauchi M, Kajiya M.: The 82nd Annual Meeting of the Japanese Cancer Association (Yokohama), 2023.9.21-9.23.

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29: A case of Noonan's syndrome with hypertrophic cardiomyopathy treated with bilateral mandibular wisdom teeth extraction under general anesthesia: Asada Y, Ito N, Yoshioka Y, Higaki M, Obayashi F, Hamada A, Yamasaki S, Tani R, Koizumi K, Yanamoto S.: The 70th Annual Meeting of the Japanese Stomatological Society, Chugoku-Shikoku Branch (Kurashiki), 2023.10.7.

30: Two cases of orofacial granuloma in young children; Uehara T, Obayashi F, Ito N, Hamana T, Koizumi K, Yanamoto S.: The 70th Annual Meeting of the Japanese Stomatological Society, Chugoku-Shikoku Branch (Kurashiki), 2023.10.7.

31: Organ-specific Symposium: Learn from the latest guidelines! Oral cancer treatment in a super-aging society - Surgical treatment for elderly oral cancer patients: Yanamoto S, Yamakawa N, Yamada S, Hasegawa T, Takeda D, Suzuki T, Matsuyama T, Obayashi F, Yamasaki S, Fukutani T, Aoki T, Ueda M, Ota Y.: The 61th Annual Meeting of Japan Society of Clinical Oncology (Yokohama), 2023.10.20.

32: Investigation of local recurrence of oral cancer: relationship with anatomical landmarks in cases of backward progression: Ito N, Koizumi K, Shintani T, Asada Y, Fukutani T, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Yanamoto S.: 9th World Congress of the International Academy of Oral Oncology 2023 (Incheon), 2023.11.1-11.4.

33: Clinical significance of extranodal extension of cervical lymph node metastasis in oral squamous cell carcinoma: Higaki M, Koizumi K, Ando T, Obayashi T, Ito N, Shintani T, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: 9th World Congress of the International Academy of Oral Oncology 2023 (Incheon), 2023.11.1-11.4.

34: Clinical analysis of the elderly patients with oral squamous cell carcinoma: Hamada A, Koizumi K, Fukutani T, Yamasaki E, Uehara T, Eboshida N, Nobumoto T, Higaki M, Obayashi F, Yamasaki S, Ito N, Ishida Y, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: 9th World Congress of the International Academy of Oral Oncology 2023 (Incheon), 2023.11.1-11.4.

35: A retrospective study of high-risk factors for metastasis in patients with resected T1-2N0 tongue cancer: Obayashi F, Koizumi K, Higaki M, Ito N, Nobumoto T, Fukutani T, Hamada A, Yamasaki S, Ishida Y, Ando T, Hamana T, Yoshioka Y, Shintani T, Tani R, Yanamoto S.: 9th World Congress of the International Academy of Oral Oncology 2023 (Incheon), 2023.11.1-11.4.

36: Secular changes of circulating tumor cells and cell-free DNA in blood with oral squamous cell carcinoma: Eboshida N, Hamada A, Asada Y, Ueda Y, Uehara T, Odawara A, Yamasaki E, Matsuyama

T, Okamoto K, Fukutani T, Nobumoto T, Obayashi F, Ito N, Ishida Y, Higaki M, Yamasaki S, Hamana T, Koizumi K, Yoshioka Y, Tani R, Yanamoto S.: 9th World Congress of the International Academy of Oral Oncology 2023 (Incheon), 2023.11.1-11.4.

37: AXL activates YAP and confers resistance to EGFR inhibitors: Okamoto K, Ando T, Kajiya M, Miyauchi M, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

38: Analysis of quality of life (QoL) before and after surgical procedures in patients with medication-related osteonecrosis of the jaw: Odawara A, Yamasaki S, Yoshioka Y, Ishida Y, Ito N, Fukutani T, Koizumi K, Shintani T, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

39: A case of transformation from odontogenic keratocyst to SOKC/keratoameloblastoma during long-term follow-up: Yamasaki S, Shintani T, Hayasido Y, Ando T, Miyauchi M, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

40: Neck dissection for N1 oral cancer patients: Ishida Y, Koizumi K, Higaki M, Obayashi F, Ito N, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

41: Clinical significance of extranodal extension of cervical lymph node metastasis in oral squamous cell carcinoma: Higaki M, Koizumi K, Ando T, Ueda Y, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Ryouji T, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

42: Investigation of local recurrence of oral cancer: relationship with anatomical landmarks in cases of backward progression: Ito N, Koizumi K, Shintani T, Asada Y, Eboshida N, Matsuyama T, Okamoto K, Fukutani T, Obayashi F, Higaki M, Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

43: A retrospective study of high-risk factors for metastasis in patients with resected T1-2N0 tongue cancer: Obayashi F, Koizumi K, Higaki M, Hamada A, Ito N, Yamasaki S, Hamana T, Yoshioka, Y, Tani R, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

44: Changes over time in circulating tumor cells and cell-free DNA in blood in oral squamous cell carcinoma: Eboshida N, Hamada A, Matsuyama T, Obayashi F, Ito N, Higaki M, Yamasaki S, Koizumi K, Yoshioka Y, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

45: A case of vestibular schwannoma diagnosed with oral symptoms: Fukutani T, Tani R, Ito N, Okamoto K, Eboshida N, Asada Y, Yanamoto S.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

46: Metagenomic sequencing searches for oral bacterial flora associated with osteomyelitis of the jaw: Yahara H, Yanamoto S, Takahashi M, Hamada H, Asaka T, Kitagawa Y, Moridera K, Noguchi K, Maruoka Y.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

47: Clinical and statistical study of patients with oral malignancies in the Department of Dentistry and Oral Surgery, Hiroshima Prefectural Hospital: Sugano D, Omachi K, Ueda Y, Matsui K, Kiriyama T, Kanda T.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

48: Two cases of Reconstruction of the Osteoradionecrosis of the jaw using the patient specific custom-made system.: Sugano D, Omachi K, Ueda Y, Matsui K, Kiriyama T, Kanda T.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

49: A Multi-Institutional Observational Study on Imaging Classification of Drug-Related Osteonecrosis of the Jaw (MRONJ): Otsuru K, Sakamoto Y, Ueda J,Kondoh E, Kojima Y, Ymamura Y, Rokutanda K, Iwata E, Ueda S, Nakahara H, Hasegawa T, Yamasaki S, Myouken Y, Kobayasi M, Sado T, Kanda T, Itoh Y, Ishimashi K, Soutome S, Naruse T, Umeda M.: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2023.11.10-11.12.

50: Changes over time in circulating tumor cells and cell-free DNA in blood and their utility in oral squamous cell carcinoma: Eboshida N, Hamada A, Kono H, Matsuyama T, Obayashi F, Ito N, Higaki M, Yamasaki S, Koziumi K, Yoshioka Y, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

51: A study of local recurrence in the patients of posteriorly advanced oral squamous cell carcinoma: Ito

N, Koizumi K, Shintani T, Asada Y, Fukutani T, Obayashi F Hamada A, Yamasaki S, Hamana T, Yoshioka Y, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

52: Clinical and statistical study of the Department of Oral and Maxillofacial Surgery, Hiroshima University Hospital: Yamasaki E, Koizumi K, Nishida N, Asada Y, Ueda Y, Uehara T, Odawara A, Eboshida N, Matsuyama T, Okamoto K, Nobumoto T, Fukutani T, Obayashi F, Ito N, Ishida Y, Higaki M, Hamada A, Yamasaki S, Yoshioka Y, Tani R, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

53: Evaluation of quality of life (QoL) in patients with medication-related osteonecrosis of the jaw: Odawara A, Yamasaki S, Yoshioka Y, Ishida Y, Ito N, Fukutani T, Koizumi K, Shintani T, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

54: The selective neck dissection for N1 oral cancer patients: Ishida Y, Koizumi K, Yamasaki S, Hamada A, Higaki M, Ito N, Obayashi F, Nobumoto T, Fukutani T, Hayashi S, Okamoto K, Eboshida N, Matsuyama T, Asada Y, Ueda Y, Uehara T, Odawara A, Yamasaki E, Yoshioka Y, Tani R, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

55: A retrospective study on pathological poor prognostic factors for lymph node metastasis and distant metastasis in patients with resected T1-2N0 tongue cancer: Obayashi F, Koizumi K, Hamada A, Ito N, Yamasaki S, Yoshioka Y, Tani R, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

56: Prognostic impact of extranodal extension of cervical lymph node metastasis in squamous cell carcinoma of the oral cavity: Higaki M, Koizumi K, Kunihara S, Ando T, Hamada A, Ito N, Obayashi T, Asada Y, Ueda Y, Uehara T, Odawara A, Yamasaki E, Eboshida N, Matsuyama T, Okamoto K, Fukutani T, Taguchi Y, Yamasaki S, Hamana T, Yoshioka Y, Tani R, Yanamoto S.: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association, joint of the 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.11.26.

57: Perineural invasion of upper lip cancer: Okada T, Suei Y, Yamasaki S, Shimabukuro K, Nagasaki T, Otsuka M, Konishi M, Nakamoto T, Yanamoto S, Kakimoto N.: The 42nd Kansai-Kyushu Joint Regional Meeting of Japanese Society of Dental Radiology (Fukuoka), 2023.12.2.

F) Special lectures in academic meetings

1: Medical Cooperation for Oral Cancer Treatment: Yanamoto S.: Hiroshima Branch Meeting of Kyushu Dental College (Hiroshima), 2023.2.4.

2: Priodontal Disease-A familiar disease Ueda Y.: Hatsukaichi Civic Center Health Lecture (Hiroshima), 2023.2.8.

3: On assuming the position of professor: Yanamoto S.: Association Meeting of Department of Oral and Maxillofacial Surgery, 2023.2.18.

4: Practical treatment of recurrent and metastatic oral cancer in our department: Koizumi K.: Oral Oncology Conference (Nagasaki), 2023.3.28.

5: Role of Erbitux in the pharmacological treatment of recurrent or metastatic oral cancer: Yanamoto S.: Erbitux H N Expert Webinar (WEB), 2023.5.25.

6: Treatment strategies for recurrent and metastatic oral cancer: Yanamoto S.: KANSAI Oral Cancer Seminar (WEB), 2023.6.24.

7: Rethinking perioperative oral care: Kanda T, Matsui K.: The 1st Collaborative Seminar of Department of Oral Oncology, Hirohsima University (Hiroshima), 2023.7.7.

8: Virtual surgical planning in jawbone reconstruction for oral cancer: Yanamoto S.: Oncology Meeting (Hiroshima), 2023.7.26.

9: Surgical therapy for elderly patients with oral cancer: Yanamoto S.: Society for Oral Cancer Treatment of the Elderly (Tokyo), 2023.7.28.

10: Guidelines for oral surgery, especially for oral cancer (luncheon seminar): Yanamoto S.: The 37th Chugoku-Shikoku Dental Anesthesia Research Meeting (Regional Meeting of the Japanese Society of Dental Anesthesiologists) (Hiroshima), 2023.8.6.

11: To avoid missing oral cancer! -About Remote Consultation Service for Oral Mucosa Diseases-:

Yanamoto S.: Saeki Dental Association Lecture Meeting (Hiroshima), 2023.9.30.

12: Role of treatment with oral appliance in sleep-disordered breathing: Yanamoto S.: Hiroshima City Dental Association Lecture Meeting (Hiroshima), 2023.10.13.

13: Our ideal oral cancer treatment: Yanamoto S. Hiroshima University School of Dentistry, First Department of Oral and Maxillofacial Surgery, Association Lecture Meeting (Hiroshima), 2023.10.14.

14: Toward recovery of morphological function and social reintegration in a super-aging society "Current status and approaches in Hiroshima Prefecture": Yanamoto S.: Shimane University Cancer Care Workers Workshop "Toward the establishment of a Chugoku regional consortium in oral cancer treatment" (Izumo), 2023.10.24.

15: Public Lecture "What kind of surgery in implant treatment? Soichi Yanagimoto The 43rd Annual Meeting of the Japanese Society of Oral Implantology, Chugoku-Shikoku Branch (Kochi), 2023.10.28.

16: MRONJ - Necessity of Medical-Dental-Drug Cooperation Kanda T.: Minami-ku Community Medical and Dental Cooperation Workshop (Hiroshima), 2023.11.7.

17: To avoid missing oral cancer! -About Remote Consultation Service for Oral Mucosa Diseases-: Yanamoto S.: Asa Dental Association Lecture Meeting (Hiroshima), 2023.11.24.

18: Oral cancer treatment and medical collaboration in the AYA generation and super-aging society: Yanamoto S.: Hiroshima University School of Dentistry, Department of Orthodontics Academic Seminar (Hiroshima), 2023.12.10.

19: The latest treatment strategy for recurrent or metastatic oral cancer: Yanamoto S.: Hokkaido Oral Tumor Forum (Sapporo), 2023.12.21.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grants-in aid for scientific research (B): Yanamoto S. (Principal Investigator), Multicenter study of circulating tumor cells and circulating tumor DNA involved in distant metastasis of oral cancer. 22H03292. 3,600,000 yen

2: Grants-in aid for scientific research (C): Hayashido Y. (Principal Investigator), Inhibition of Oral Cancer Metastasis by Autophagy Induction of Tight Junction Component Proteins. 23K09312. 1,560,000 yen

3: Grants-in aid for scientific research (C): Tani R. (Principal Investigator), Microbiome-regulated expression kinetics of PD-L1 in the oral cancer stem cell niche. 22K10120. 800,000 yen

4: Grants-in aid for scientific research (C): Koizumi K. (Principal Investigator), Development of detection system for oral cancer patient's blood circulating tumor cells and prediction of clinical pathology and prognosis using it. 22K10146. 1,100,000 yen

5: Grants-in aid for scientific research (C): Hamana T. (Principal Investigator), Elucidation of the mechanism of E-cadherin processing-mediated oral cancer cell proliferation for therapeutic application. 21K10114. 1,200,000 yen

6: Grant-in-aid for scientific research (C): Yamasaki S. (Principal Investigator): Immunotherapy using lymphocyte-derived iPSC from oral cancer patients and molecular mechanism analysis to develop new treatment. 23K09398. 1,200,000 yen

7: Grant-in-aid for scientific research (C): Hamada A. (Principal Investigator), Mechanisms of supernumerous tooth development using cranioclavicl dysplasia disease-specific iPS cells. 22K10148. 800,000 yen

8: Grant-in-aid for early-career scientists: Higaki M. (Principal Investigator), Functional analysis of FGF-Binding Protein in squamous cell carcinoma cells using the CRISPR/Cas9 system. 21K17141. 1,200,000 yen

9: Grant-in-aid for early-career scientists: Taguchi Y. (Principal Investigator), Identification of growth factors involved in maintaining undifferentiated nature of dental pulp-derived iPSCs in serum-free systems. 19K19233. 800,000 yen

10: Grants-in aid for scientific research (C): Kanda T. (Principal Investigator), Development of a gene therapy for PTEN mutation Cowden syndrome using serum-free cultured iPS cells. 20K10117. 1,000,000 yen

11: Grant-in-aid for early-career scientists: Sakurai S. (Principal Investigator), Research and development of nucleic acid medicine targeting integrin which is involved in invasive metastasis of oral squamous cell carcinoma. 20K18726. 1,000,000 yen

12: Grant-in-aid for early-career scientists: Nobumoto T. (Principal Investigator), Elucidation of the processing mechanism of tight junction component proteins involved in oral cancer metastasis.

21K17139. 1,200,000 yen

13: Grant-in-aid for scientific research (C): Yanamoto S. (Co-Investigator), Prevention of postoperative pneumonia by antimicrobial pharmacy administration in intubated patients after oral surgery. 23K09482. 50,000 yen
14: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), A multi-institutional phase III randomized controlled trial on prevention of oral mucositis by steroid-containing agents. 23K09315. 30,000 yen
15: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), Design of biomaterials for in situ tissue regeneration of the tongue. 23K09231. 20,000 yen
16: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), Elucidation of the relationship between sleep apnea and sarcopenia in the elderly. 23K09147. 23K09147. 50,000yen
17: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Biomarkers for invasion and metastasis of oral cancer via partial-EMT. 22K10161. 100,000 yen
18: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Molecular biology of extranodal extention mechanism of cervical lymph node metastasis in oral squamous cell carcinoma. 21K10040. 10,000 yen
19: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Multi-institutional study to determine indications for preventive dissection of tongue cancer, biomarker search and establishment of tissue bank. 21K10098. 10,000 yen
20: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Elucidation of drug sensitivity mechanisms for predicting therapeutic efficacy of pembrolizumab. 21K10117. 50,000 yen
21: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Phase III study on prevention of radiation-induced oral mucositis with steroid ointment and changes in oral microflora. 20K10097. 30,000 yen
22: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Establishment of a highly accurate method for diagnosing oral cancer lymph node metastasis using US. 20K10122. 0 yen
23: Grant-in-aid for early-career scientists; Fukutani T. (Principal Investigator), Establishment of "synovial chondromatosis-specific iPSC" and study of the disease through genomic surgery of pathogenic mutant genes. 23K16117. 1,700,000 yen
24: Research Center for Biomedical Engineering 2023, Collaborative Research Projects: Yoshioka Y. (Co-Investigator), Research on the development of a remote-controllable dental chair. 150,000 yen
25: Grant-in-aid for fund for the promotion of joint international research (Fostering Joint International Research(B)): Hamada A. (Co-Investigator), Mechanobiological mechanisms of tendons and ligaments controlling the musculoskeletal system. 21KK0161. 400,000 yen
26: The order and the 4th year's fee for the director of the Prefectural Hiroshima Hospital: Kanda T, Quality Improvement of Rehabilitation Guidance for Eating and Swallowing Dysphagia. 500,000 yen

(5) Academic Awards, etc.

1: Ito N.: Oral presentation award: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient
2: Obayashi F.: Oral presentation award: The 32nd Annual Meeting of Japanese Society of Dentistry for Medically Compromised Patient
3: Okamoto K: Best Oral presentation Award: The 68th Congress of the Japanese Society of Oral and Maxillofacial Surgeons

(6) Patents

1: Patent: Method for determining cancer risk: (Patent No. 7399398) (Okamoto T, Tani R, Matsui K)
2: Patent: Method for determining whether a patient belongs to the good prognosis group after cancer treatment and method for determining whether a patient belongs to the risk group for developing juvenile cancer: (Patent No. 7399399) (Okamoto T, Tani R)

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(1) Staff and Students

Professor: Tomonao Aikawa
Research Associate: Yoshiaki Ninomiya (Diagnosis and treatment lecturer), Shigehiro Ono (Diagnosis and treatment lecturer), Kuniko Mizuta, Takayuki Nakagawa, Misato Tada, Akiko Fukui (~Mar), Takako Naruse, Ryo Uetsuki, Miyuki Sakuma
Resident: Yasuki Ishioka, Yoko Ishida, Kazuki Sasaki(~Mar), Shohei Fukada(~Mar)
Graduate Student: Nao Yamakado(~Mar), Misaki Akagi, Chieko Niwata, Ayumi Fujii, Daitoku Murakami , Keijyuurou odan, Jun Ashida (Apr~), Yoshiteru Yamashita (Apr~)
Teaching the study assistant:Yuko Shintaku(Dec~)
Registered Intern: Masaki Kiyomihara, Yoshihisa Inoue, Hiroshi Shimasue

(2) Main Research Activities

1: Functional evaluation and development of oral and maxillofacial reconstructive surgeries
2: Genomic analysis of stomatognathic diseases
3: Biochemical characterization and development of therapeutics of oral tumors
4: Molecular-biological studies on control of invasion and migration of oral cancers
5: Studies on responsible gene of osseous dysplasia of jaws
6: Molecular-biological studies on dental and periodontal tissue regeneration
7: Development of biomaterials of oral and maxillofacial reconstruction
8: Development of biomaterial for dental implant treatment

(3) Research Achievements

A) Original Papers (including Case Reports)

Original work (including case reports

1) ACE2 expression and spike S1 protein-mediated immune responses in oral mucosal cells. Akagi M, Ohta K, Fukada S, Sakuma M, Naruse T, Nakagawa T, Ono S, Nishi H, Shigeishi H, Aikawa T. Oral diseases. 2023. (Online ahead of print)
2) Pth1r Signal in Gli1+ Cells Maintains Postnatal Cranial Base Synchondrosis. Amano K, Kitaoka Y,

Sasaki U, Imamura S, Imado E, Mukai A, Doi M, Sakuma M, Ono S, Aikawa T, Yoshida M. BMC Oral Health. 23: 774, 2023.

9) Head and neck cancer patients show poor oral health as compared to those with other types of cancer. Nishi H, Obayashi T, Ueda T, Ohta K, Shigeishi H, Munenaga S, Kono T, Yoshioka Y, Konishi M, Taga R, Toigawa Y, Naruse T, Ishida E, Tsuboi E, Oda K, Dainobu K, Tokikazu T, Tanimoto K, Kakimoto N, Ohge H, Kurihara H, Kawaguchi H. BMC Oral Health. 23: 647, 2023.
10) Correction of Severe Skeletal Class II High Angle with Mandibular Retrusion and Gummy Smile by Double-Jaw Surgery. Bull Tokyo Dent Col. Yamamoto T, Kaku M, Ono S, Takechi M, Tanimoto K. 63: 177-187, 2023.
11) LL-37-dsRNA Complexes Modulate Immune Response via RIG-I in Oral Keratinocytes. Kato H, Ohta K, Akagi M, Fukada S, Sakuma M, Naruse T, Nishi H, Shigeishi H, Takechi M, Aikawa T. Inflammation. 46: 808-823, 2023.
12) HPV16 E6 and E7 is involved in inhibition of autophagy and maintenance of cancer stem cell properties in HPV16-positive oral squamous cell carcinoma cells. Shigeishi H, Sugiyama M, Akagi M, Kaneyasu Y, Maehara T, Ohta K. Oral Science International. 2023. (Online ahead of print)
13) A case of bilateral huge dentigerous cysts in the part of the mandibular wisdom tooth. Fujii A, Ono S, Nakagawa T, Nishi H, Aikawa T. The Journal of Hiroshima University Dental Society. 55: 148-153,2023.
14) A Case of Accidental Insertion of a Broken Injection Needle in soft tissues while Conducting Anesthesia of the Mandibular Foramen. Fukada S, Ono S, Mizuta K, Nakagawa T, Ninomiya f 19 (ni)--19.9 ca (ve)

Tobiume K, Takechi M, Aikawa T.: The 77th Annual Meeting of Japanese Stomatological society (2023.5.12~5.13 Okayama)

7: Challenges in highly challenging surgical orthodontic treatment of highly deformed mandibular head by ICR/PCR.: Ono S, Aikawa T.: The 77th Annual Meeting of Japanese Stomatological society Symposium 5 “Challenges in the treatment of jaw deformities” (2023.5.12~5.13 Okayama)

8: Treatment strategies for surgical orthodontic treatment of cleft lip and palate.: Aikawa T.: The 47th Annual Meeting of the Japanese Cleft Palate Association (2023.5.25~5.26 Tokyo) Symposium

9: A case of skeletal malocclusion associated with Williams syndrome treated with mandibular midline temporary bone lengthening and maxillary osteotomy.: Murotani T, Kurosaka H, Yamamoto A, Aikawa T, Yokota Y, Tanaka S, Yamashiro T.: The 47th Annual Meeting of the Japanese Cleft Palate Association (2023.5.25~5.26 Tokyo)

10: Consideration of occlusal stability from long-term management cases Treatment strategies for surgical orthodontic treatment of cleft lip and palate.: Aikawa T.: The 47th Annual Meeting of the Japanese Cleft Palate Association (2023.5.25~5.26 Tokyo)

11: Chemical inhibition of LSD1 leads to epithelial to mesenchymal transition *in vitro* of an oral squamous cell carcinoma OM-1 cell line *via* release from LSD-1 dependent suppression of ZEB1.: Yamakado N, Tobiume K, Uetsuki R, Ono S, Mizuta K, Nakagawa T, Aikawa T.: The 56th Annual Meeting of Hiroshima University Dental Society (2023.6.3 Hiroshima)

12: Surgical Strategies for TMJ Reconstruction.: Ohdan K, Ono S, Nakagawa T, Mizuta K, Ishida Y, Uetsuki R, Sasaki K, Sakuma M, Aikawa T.: The 56th Annual Meeting of Hiroshima University Dental Society (2023.6.3 Hiroshima)

13: Restoration of temporomandibular joint function in the treatment of jaw deformities Fusion and current treatment of jaw deformities and temporomandibular joint therapy.: Aikawa T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9　Tokyo) Symposium

14: A case of skeletal Class II open bite with discordance of maxillary and maxillary arch widths and CO-CR discrepancy, treated with a median bisection Le Fort type I osteotomy and sagittal division of the mandibular branch.: Yoshida Y, Ito S, Inubushi T, Yokoyama M, Miyagawa K, Seki S, Tanaka S, Aikawa T, Yamashiro T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

15: A case of Class II open bite with hypoplasia of the mandibular articular process treated with bipartite Le Fort Type I osteotomy combined with upper and lower jaw movement.: Oka A, Kaji R, Inubushi T, Shiraishi M, Aikawa T, Tanaka S, Yamashiro T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

16: A case of asymmetrical anterior maxillary bone lengthening in a patient with mandibular prognathism with unilateral cleft lip and palate.: Nakatsugawa K, Tanikawa C, Kani R, Aikawa T, Tanaka S, Yamashiro T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

17: Examination of the accuracy of 3D digital simulation.: Yoshikawa H, Tanikawa C, Ikeda N, Itoh S, Shintaku Y, Aikawa T, Tanaka S, Yamashiro T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

18: A case of anterior maxillary bone lengthening for skeletal mandibular prognathism associated with cleft palate.: Yokoyama M, Itoh S, Yoshida Y, Oka A, Aikawa T, Tanaka S, Yamashiro T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

19: A case of jaw deformity with bone resorption in the molars due to hyaluronic acid injections.: Nakagawa T, Ono S, Ishida Y, Sakuma M, Ohdan K, Higuchi M, Matsushita Y, Shintaku Y, Kojima S, Uetsuki R, Mizuta K, Hirata I, Kato K, Aikawa T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

20: A case of Class II with mandibular head growth disturbance and idiopathic mandibular head resorption dysplasia.: Sakuma M, Nakagawa T, Takagi T, Ishida Y, Higuchi M, Matsushita Y, Shintaku Y, Uetsuki R, Mizuta K, Ono S, Aikawa T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

21: A Case of Orthognathic Surgery using the Submental Orotracheal Intubation for Patient with Sturge-Weber Syndrome.: Ono S, Koizumi K, Kado I, Ogashira S, Nakagawa T, Uetsuki R, Mizuta K,

Tanimoto K, Aikawa T.: The 33rd Annual Meeting of the Japanese Society for Jaw Deformities (2023.6.8~6.9 Tokyo)

22: Clinical examination of patients using pembrolizumab in recurrent and metastatic oral cancer.: Yoshioka Y, Higaki M, Obayashi F, Ito N, Nakagawa T, Yamasaki S, Hamana T, Ono S, Koizumi K, Aikawa T, Yanamoto S.: The 47th Annual Meeting of Japan Society for Head and Neck Cancer (2023.6.15~6.16 Osaka)

23: Orthognathic surgery for patients with cleft lip and palate; maxillary anterior segmental distraction osteogenesis (MASDO) and LF1 osteotomy.: Aikawa T.: CLEFT SEOUL 2023, Symposium Session 6 (DO/ Orthognathic Surgery / Craniofacial Surgery) . (2023.6.16~6.18 North Korea)

24: Effects of Lactoferrin on Hypoxic Cancer Cells.: Murakami D, Tanimoto K.: The 27th Annual Meeting of the Japanese Association for Molecular Target Therapy of Cancer (2023.6.21~6.23 Saga)

25: Surgical strategies for TMJ reconstruction.: Ohdan K, Ono S, Nakagawa T, Mizuta K, Ishida Y, Uetsuki R, Sasaki K, Sakuma M, Aikawa T.: The 52nd Annual Meeting of the Chugoku-Shikoku Branch of the Japanese Society of Oral and Maxillofacial Surgeons (2023.7.2 Shimane)

26: Course of treatment of cervical necrotizing fasciitis caused by dental infection successfully treated with metronidazole.: Ashida J, Mizuta K, Yamakado N, Sakuma M, Uetsuki R, Nakagawa T, Ono S, Ninomiya Y, Aikawa T.:

Ono S, Nakagawa T, Ishida Y, Sakuma M, Mizuta K, Uetsuki R, Ishioka Y, Matsushita Y, Higuchi M, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

38: A case of rib cartilage reconstruction for bilateral mandibular process defects.: Uetsuki R, Ono S, Mizuta K, Sasaki K, Murodumi H, Ishioka Y, Ninomiya Y, Matsushita Y, Higuchi M, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

39: LSD1 inhibition in oral squamous cell carcinoma OM-1 releases LSD1-dependent ZEB1 gene repression and causes EMT.: Yamakado N, Tobiume K, Okuda T, Akagi M, Niwata T, Uetsuki R, Nakagawa T, Mizuta K, Ono S, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

40: ACE2 expression in oral mucosal cells and immune response mediated by Spike protein.: Akagi M, Ohta K, Sakuma M, Yamakado N, Niwata T, Naruse T, Nakagawa T, Tobiume K, Shigeishi H, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

41: Anti-rheumatic drug leflunomide's antitumor effect on oral squamous cell carcinoma.: Niwata T, Nakagawa T, Ohta K, Ono S, Yamakado N, Akagi M, Ohdan K, Tobiume K, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

42: Significance of lactoferrin in radiotherapy of oral cancer cells under hypoxic conditions.: Murakami D, Tanimoto K, Ono S, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

43: A case of a solitary fibrous tumor of the mouth floor.; Oi H, Shimasue H, Ishida Y, Ando T, Ono S, Aikawa T.: The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (2023.11.10~11.12 Osaka)

44: A case of extensive skin defect caused by necrotizing fasciitis of the cervical region due to dental infection.: Ashida J, Mizuta K, Yamakado N, Sakuma M, Uetsuki R, Nakagawa T, Ono S, Ninomiya Y, Aikawa T.: The 62nd Annual Meeting of the Hiroshima Dental Society and the 107th Annual Meeting of the Hiroshima University Dental Society (2023.11.25~11.26 Hiroshima)

45: Investigation of risk factors that resulted in the removal of a patient with peri-implantitis.: Ninomiya Y, Ishioka Y, Ono S, Mizuta K, Nakagawa T, Sasaki K, Fukada S, Sakuma M, Uetsuki R, Ishida Y, Fukui A, Ohdan K, Aikawa T.: The 62nd Annual Meeting of the Hiroshima Dental Society and the 107th Annual Meeting of the Hiroshima University Dental Society (2023.11.25~11.26 Hiroshima)

46: A case of extensive skin defect caused by necrotizing fasciitis of the cervical region due to dental infection.: Ashida J, Mizuta K, Yamakado N, Sakuma M, Uetsuki R, Nakagawa T, Ono S, Ninomiya Y, Aikawa T.: The 62nd Annual Meeting of the Hiroshima Dental Society and the 107th Annual Meeting of the Hiroshima University Dental Society (2023.11.25~11.26 Hiroshima)

47: A Clinical and Statistical Study of Jaw Deformity Surgery in the Department of Oral and Maxillofacial Reconstruction Surgery, Hiroshima University Hospital over a 10-year period.: Ishida Y, Ono S, Mizuta K, Nakagawa T, Ninomiya Y, Ishioka Y, Naruse T, Uetsuki R, Sakuma M, Yamakado N, Akagi M, Niwata T, Fuji A, Murakami D, Ohdan K, Ashida J, Yamashita Y, Aikawa T.: The 62nd Annual Meeting of the Hiroshima Dental Society and the 107th Annual Meeting of the Hiroshima University Dental Society (2023.11.25~11.26 Hiroshima)

48: Clinical study of poorly progressing implant cases that came to our department.: Ninomiya Y, Ono S, Nakagawa T, Ishioka Y, Takechi M, Aikawa T.: The 27th Annual Meeting and Academic conference of Japanese Academy of Maxillofacial Implants (2023.12.2 Tokyo)

49: Investigation of lactoferrin action on cancer cells under hypoxic conditions.: Murakami D, Fukazawa K, Hirohashi N, Ono S, Aikawa T, Tanimoto K.: The 46th Annual Meeting of the Molecular Biology Society of Japan (2023.12.6~12.8 Hyogo)

F) Special lectures in academic meetings

1) The 38th Second Department of Oral Surgery, Faculty of Dentistry, Hiroshima University friendship meeting Special Lecture: A Year in Review and the Future of Oral and Maxillofacial Reconstructive Surgery. (2023.4.1 Hiroshima), Aikawa T.
2) Stryker seminar 3rd SONS “Mastering genioplasty” (2023.4.13 Web), Aikawa T.
3) The 2nd Kyushu Jaw Deformity Surgery Review Meeting and Networking Session From basic techniques to surgery for difficult cases~ “A patient with progressive condylar resorption treated with

total temporomandibular joint arthroplasty" (2023.6.3 Fukuoka), Ono S.

4) Lecture meeting of the 2023 Ehime Branch of the Hiroshima University School of Dentistry Alumni Association. (2023.6.10 Ehime), Aikawa T.
5) Special Lecture at the University of Tokushima School of Dentistry: "Occlusal surgery for intractable diseases: Occlusal treatment for cleft lip and palate and temporomandibular joint diseases." (2023.7.6 Tokushima), Aikawa T.
6) Academic lecture at the 1st Hiroshima Jaw Deformity Study Group: "Orthognathic surgery and surgical preparation at Hiroshima University. Focusing on upper and lower jaw movement surgery" (2023.9.21 Hiroshima), Aikawa T.
7) Academic lecture at Owl Society: "Skilled oral surgical procedures. Appropriate use of antibacterial drugs, TMJ surgery, and jaw deformity treatment up to date" (2023.10.14), Aikawa T.
8) Stryker seminar 4th SONS "Mastering SONS" Seminar Instructor, Hands-on Instructor (2023.11.25 ~11.26 Fukuoka), Aikawa T.
9) Academic Seminar, Hiroshima University School of Dentistry, Department of Orthodontics. "Oral surgical treatment aimed at occlusal surgery and occlusal reconstructive surgery" (2023.11.27 Hiroshima), Aikawa T.
10) IBRA (international bone research association) seminar, orthognathic surgery, Congress president, Seminar Instructor, Hands-on Instructor (2023.12.16~12.17 Yokohama), Aikawa T.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1) Grant-in-Aid for Scientific Research (Scientific research (C)) continuation: Aikawa T.: Research on the mechanism of tumor-induced bone resorption: Comprehensive analysis focusing on RANKL expression regulation and osteoclastogenesis. Issue number 19K10266
2) Grant-in-Aid for Scientific Research (Scientific Research (C)) continuation: Takechi M, Ohta K, Nakagawa T.: Basic research for developing dental implant treatment guidelines for patients receiving bisphosphonates. Issue number 21K09952
3) Grants-in-Aid for Scientific Research (Scientific Research (C)) continuation: Nakagawa T, Takechi M, Ohta K.: Development of transplantation material for treatment of jaw bone necrosis with angiogenic effect. Issue Number 21K10094
4) Grants-in-Aid for Scientific Research (Challenging Research (C)) continuation: Naruse T.: Elucidation of the immune response mechanism of SARS-Cov-2 binding receptors in the oral mucosa. Issue Number 21K17116
5) Grants-in-Aid for Scientific Research (Scientific Research (C)) continuation: Mizuta K, Tobiume K.: Does noncoding RNA involved in the development of mandibular diaphyseal dysplasia (GDD)? Issue Number 22K10119
6) Grants-in-Aid for Scientific Research (Scientific Research (C)) continuation: Aikawa T, Miyagawa K.: Bone resorption mechanisms in the tumor microenvironment: Analysis centered on IL-7 and RANKL expression mechanisms. Issue Number 22K10145
7) Grants-in-Aid for Scientific Research (Challenging Research (C)) continuation: Uetsuki R.: Analysis of relationship between Snail-induced EMT and cancer stem cell characteristics in oral cancer cells. Issue Number 22K17158
8) Grants-in-Aid for Scientific Research (Challenging Research (C)) continuation: Ishida Y.: Expression of HO-1 and inflammatory genes induced by C.a from oral mucosa. Issue Number 22K17185
9) Grant-in-Aid for Scientific Research (Basic Research (C)) new: Shigeishi H, Ono S, Elucidation of the regulatory mechanism of cancer stem cell traits mediated by Beclin-1 in oral squamous cell carcinoma cells highly expressing CD44. Issue Number 23K09370
10) Grant-in-Aid for Scientific Research (Basic Research (C)) new: Ohta K, Aikawa T, Sakaguchi T, Komatsuzawa H, Shigeishi H, Elucidation of the novel functions of the new coronavirus target protein in the oral mucosa and its expression regulatory factors (share) Issue Number 23K09371
11) Grant-in-Aid for Scientific Research (Young Research) new: Sakuma M, Recognition mechanism of Candida albicans cell wall components by CEACAM1 in oral mucosa Issue Number 23K159740A

(5) Academic Awards, etc.

1) The 77th Annual Meeting of the Japanese Society of Oral Medicine. Rising Scientist Awards.

(2023.5.11~5.13 Okayama), Yamakado N.

2) The 68th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons. Oral Presentation Award (2023.11.10~11.12 Osaka), Yamakado N.
3) The 33rdAnnual Meeting of the Japanese Society for Jaw Deformities. excellent poster award “Class II case with mandibular condylar growth disorder and idiopathic mandibular condylar resorptive dysplasia” (2023.6.8~6.9 Tokyo), Sakuma M, Nakagawa T, Takagi T, Ishida Y, Higuchi M, Matsushita Y, Shintaku Y, Uetsuki R, Mizuta K, Ono S, Aikawa T

(6) Patents

Return to Contents

(1) Staff and Students

Professor : Kazuhiro Tsuga
Associate Professor : Yasuhiko Abe, Mineka Yoshikawa, Takayasu Kubo
Assistant Professor : Hiroshi Oue, Shinsuke Okada, Yoshifumi Oki, Maho Takeuchi, Hanako Umehara, Kiichi Nakamori
Resident : Mariko Maruyama, Eri Ishida, Azusa Haruta,
Graduate Student : Yutaro Takahashi, Rie Hatakeyama, Yoko Hama, Hengky Bowo Ardhiyanto, Takashi Ogino, Yusuke Morimoto
Research Fellow : Aya Hiraoka
Clinical Trainee : Michihiko Kawamura, Hideki Yamamoto, Toru Akutsu, Naoyuki Kouyama, Mie Tatsumura
Administrative staff : Rinko Kurumi

(2) Main Research Activities

1: Basic research on PEEK materials for dental applications and clinical research on PEEK crowns for molars
2: Colonization survey of drug-resistant bacteria in long-term care facilities
3: Implementation of tongue resistance training for the elderly and verification of its effect
4: Relationship between eating behavior and oral function in healthy young people
5: Relationship between cognitive decline due to tooth loss and intestinal bacteria
6: The mechanism by which tooth loss causes cognitive decline
7: Development of novel biomaterial with “bio-metal”
8: Establishment of a new oral hygiene assessment method using an IOS
9: Development of a predict diagnostic device t for implant treatment
10: Performance and safety evaluation of dental materials containing new inorganic antibacterial agents
11: Establishment of a new dysphagia evaluation method using a portable ultrasound diagnostic device
12: Study on evaluation method of Preferred chewing side

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Comparative implant stability of a novel implant-porous titanium complex and an implant-porous hydroxyapatite complex for bone reconstruction material: Kobatake R, Doi K, Wakamatsu K, Oki Y, Morita K, Tsuga K.: Original: Journal of Hard Tissue Biology, 32(3):177-182, 2023.
2: A case report of oral hygiene evaluation using intraoral scanner: Yoshiga C, Doi K, Kawagoe M, Oue H, Kobatake R, Umehara H, Tsuga K: The journal of Hiroshima University Society, 55(2):138-142, 2023.
3: Investigation of the utility of dental plaque detection using intraoral scanner images: Yoshiga C, Doi K, Oue H, Kobatake R, Kawagoe , (a0.5 (c Tw 9 (m)21 (e)-1185 (h)8 (ar)-234 (a H)1.1 (,)-1 (i)12 (T)58.8 (s)541 (u)8.1 (g

Roy, Ioana-Emilia Mosneag, Tomonori Aikawa, Marie-Louise Holm, Chia-Chen Liu, Yasuteru Inoue, Patrick M. Sullivan, Yan W. Asmann, Betty Y.S. Kim, Guojun Bu, Takahisa Kanekiyo: JCI Insight. 8(7), e163822. 2023.

7: Mouse maternal odontogenic infection with *Porphyromonas gingivalis* induces cognitive decline in offspring: Eri Ishida, Hisako Furusho, Ting-Yi Renn, Fumie Shiba, Hung-Ming Chang, Hiroshi Oue, Ryuji Terayama, Yukio Ago, Kazuhiro Tsuga, Mutsumi Miyauchi: Front Pediatr. 11:1203894. 2023.

8: Prosthodontic treatment can improve the ingestible food profile in Japanese adult outpatients: Kimura-Ono A, Maekawa K, Kuboki T, Nawachi K, Fujisawa M, Sato H, Aita H, Koyama S, Hideshima M, Sato Y, Wake H, Nagao K, Kodaira-Ueda Y, Tamaki K, Sadamori S, Tsuga K, Nishi Y, Sawase T, Koshino H, Masumi SI, Sakurai K, Ishibashi K, Ohyama T, Akagawa Y, Hirai T, Sasaki K, Koyano K, Yatani H, Matsumura H, Ichikawa T, Ohkawa S, Baba K: J Prosthodont Res. 2023 Apr 12;67(2):189-195.

9: Antimicrobial adhesive polyurethane gel sheet with cetylpyridinium chloride-montmorillonite for facial and somato prosthesis fastening: Nakamori K, Abe Y, Takeuchi M, Kagawa K, Yoshihara K, Yoshida Y, Tsuga K: J Prosthodont Res. 2023 Apr 12;67(2):180-188.

10: Association between motor symptoms of Parkinson's disease and swallowing disorders: Nakamori M, Toko M, Yamada H, Hayashi Y, Ushio K, Yoshikawa K, Haruta A, Hiraoka A, Yoshikawa M, Nagasaki T, Mikami Y, Maruyama H.: Neurological Sciences, 2023. Online ahead of print.

11: Detailed findings of videofluoroscopic examination among patients with Parkinson's disease on the effect of cervical percutaneous interferential current stimulation: Nakamori M, Toko M, Yamada H, Hayashi Y, Haruta A, Hiraoka A, Yoshikawa M, Nagasaki T, Ushio K, Yoshikawa K, Shimizu Y, Mikami Y, Maruyama H.: Frontiers in Neurology, 14:1279161, 2023.

12: Swallowing sound index analysis using electronic stethoscope and artificial intelligence for patients with Parkinson's disease. Nakamori M, Shimizu Y, Takahashi T, Toko M, Yamada H, Hayashi Y, Ushio K, Yoshikawa K, Hiraoka A, Yoshikawa M, Nagasaki T, Mikami Y, Maruyama H.J Neurol Sci, Nov 15;454:120831, 2023.

13: Impact of neck percutaneous interferential current sensory stimulation on swallowing function in patients with Parkinson's disease: A single-arm, open-label study protocol. Nakamori M, Toko M, Yamada H, Hayashi Y, Yoshikawa K, Yoshikawa M, Nagasaki T, Hiraoka A, Shimizu Y, Mikami Y, Maruyama H.Contemp Clin Trials Commun, 33:101158, 2023.

14: Disinfectant susceptibility of third-generation-cephalosporin/carbapenem-resistant gram-negative bacteria isolated from the oral cavity of residents of long-term-care facilitiesHaruta A, kawada-Matsuo M, Le MN, Yoshikawa M, Kajihara T, Yahara K, Kitamura N, Kutsuno S, Arai C, Takeuchi M, Sugawara Y, Hisatsune J, Tsuga K, Ohge H, Sugai M, Komatsuzawa H. Appl Environ Microbiol, 89 (1): e0171222, 2023.

15: Developmental impairments of craniofacial bone and cartilage in transgenic mice expressing FGF10. Yoshioka H, Kagawa K, Minamizaki T, Nakano M, Aubine JE, Kozai K, Tsuga K, Yoshiko Y. Bone Rep, 26:18:101692, 2023.

B) Review

C) Publications

D) Other Publications

1: New tongue training device “Pekojina”: Yoshikawa Mineka, JSDNNM homepage Column January issue, 2023.

2: “Denture”: Yoshikawa Mineka: Handbook of Eating, Swallowing and Nutritional Care for Neurological Diseases - Guide and Q&A for patients, families and care staff -Chapter 2-7, Ishiyaku Pub, Inc, P60-63, 2023.

3: Chair side Q A Question about gerodontology, #17 Are there any oral characteristics that appear with menopause? : Yoshikawa Mineka, The journal of dental hygienist (July issue), Quintessence publishing, Vol. 47 P27, 2023.

4: Oral function and rehabilitation: Yoshikawa Mineka: Monthly Book ENTONI ”Desphagia treatment”, Zen Nihonbyoin Shuppankai, No.280, P32-40, 2023.

E) Presentations at Scientific Meetings

1: Assessment of bone density of cancellous bone at the implant site by measuring cutting torque: Wakamatsu K, Doi K, Kobatake R, Oki Y, Oue H, Kubo T, Tsuga K: The 53rd Annual Scientific Meeting of the Japanese Society of Oral Implantology, Sapporo, 2023.

2: Use of intraoral scanner in the evaluation of oral health Kawagoe M, Doi K, Munenaga C, Oue H, Umehara H, Kubo T, Tsuga K: The 53rd Annual Scientific Meeting of the Japanese Society of Oral Implantology, Sapporo, 2023.

3: Development of a photosensitive collagen sealing method that enables reliable retention of the bone substitutes: Yasuda K, Okada S, Hashimoto Y, Tsuga K: The 53rd Annual Scientific Meeting of the Japanese Society of Oral Implantology, Sapporo, 2023.

4: Establishment of bone density evaluation method using a novel bone cutting drill: Doi K, Wakamatsu K, Oki Y, Oue H, Kubo T, Kobatake R, Tsuga K: The 43rd Annual Scientific Meeting of the Chugoku/Shikoku Branch of the Japanese Society of Oral Implantology, Kochi, 2023.

5: Establishment of bone density evaluation method by measuring torque value of newly designed drill: Wakamatsu K, Doi K, Kobatake R, Oki Y, Oue H, Kubo T, Konishi M, Tsuga K: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association and the 107th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2023.

6: Relationship between Intraoperative bone density assessment and implant primary stability using a novel drill: Morimoto Y, Doi K, Wakamatsu K, Kobatake R, Oki Y, Kubo T, Tsuga K: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association and the 107th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2023.

7: A novel implant placement technique using a three-dimensionally-printed duplicate denture for implant-stabilized overdentures: Izumikawa T, Doi K, Shimoi M, Itotagawa A, Iwaguro S, Kubo T, Tsuga K: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association and the 107th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2023.

8: Application of intraoral scanner in the evaluation of oral health Comparative study in O'Leary's plaque control record: Yoshiga C, Doi K, Oue H, Kawagoe M, Kobatake R, Umehara H, Wakamatsu K, Tsuga K: The 62nd Scientific Meeting of Hiroshima Prefectural Dental Association and the 107th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2023.

9: Clinical report of two-years follow-up after cementing PEEK crown on molars: Yokoi M, Abekura H, Kagawa K, Nishio F, Umehara H, Kato M, Oki Y, Doi K, Morita K, Tsuga K.:Annual Scientific Meeting of Japan Prosthodontic Society, Chugoku & Shikoku Branch, September 2-3, 2023

10: Investigation of antimicrobial properties of PEEK with silver ion-containing zeolite: Masamichi Katou, Fumiko Nishio, Kouji Morita, Hitoshi Abekura, Kazuhiro Tsuga.The 62nd Hiroshima Prefectural Dental Association The 107th Annual Meeting of Hiroshima University Dental Society, 2023

11: Evaluation of polished surfaces of crown-colored PEEK materials: Momoyo Higo, Shogo Iwaguro, Ryoji Kato, Yukihiro Takayama, Haruya Kawabata, Masamichi Katou, Fumiko Nishio, Kouji Morita, Hitoshi Abekura, Kazuhiro Tsuga. The 62nd Hiroshima Prefectural Dental Association The 107th Annual Meeting of Hiroshima University Dental Society, 2023

12: Effect of tongue training using medical tongue training equipment on tongue pressure in early older adults: Maho Takeuchi, Mineka Yoshikawa, Miyuki Yokoi, Kazuko Kagawa, Chiho Takeda, Yutaro Takahashi, Azusa Haruta, Aya Hiraoka, Hiroshi Oue, Kazuhiro Tsuga: IAGG Asia/Oceania Regional Congress 2023, Yokohama (Japan), 2023.

13: The effect of experimental tooth loss on gut microbiota and cognitive function in mice: Takashi Ogino, Miyuki Yokoi, Hiroshi Oue, Rie Hatakeyama, Yuhei Hashimoto, Eri Ishida, Kazuhiro Tsuga: The 62nd Hiroshima Prefectural Dental Association The 107th Annual Meeting of Hiroshima University Dental Society, 2023.

14: The history and challenges of forming an eating and swallowing support team at Hiroshima University Hospital: Hirayama J, Yoshikawa K, Amano K, Mashida E, Kawagoe M, Fudeho K, Yoshikawa M, Nakamori M: The 29th Annual meeting of the Japanese society of dysphagia rehabilitation, Yokohama (Japan), 2023.

15: Efforts to improve tongue pressure using the tongue pressure training device "Pekojina" for convalescent stroke patients: Yoshikawa M, Sakihama H, Takemoto R, Tsuga K: The 29th Annual meeting of the Japanese society of dysphagia rehabilitation, Yokohama (Japan), 2023.

16: Relationship between oral function and “fast eating”: Yokoi M, Hiraoka A, Takeuchi M, Maruyama

M, Takeda C, Haruta A, Takahashi Y, Yoshikawa M, Yoshida M, Tsuga K: The 34th Annual meeting of the Japanese society of Japanese Society of Gerodontology, Yokohama (Japan), 2023.

17: Effects of tongue training using medical tongue training equipment on tongue pressure in early older adults: Takeuchi M, Yoshikawa M, Yokoi M, Kagawa K, Takeda C, Takahashi Y, Haruta A, Hiraoka A, Oue H, Tsuga K: IAGG Asia/Oceania regional congress, Yokohama (Japan), 2023.

18: Oral and rectal colonization by antimicrobial-resistant Gram-Negative bacteria in older adults requiring severe intensive nursing care admitted to a long-term care facility: Yoshikawa M, Haruta A, Kajihara T, Takeuchi M, Kawada-Matsuo M, Nguyen-Tra Le M, Tsuga K, Komatsuzawa H, Ohge H, Sugai M: IAGG Asia/Oceania regional congress, Yokohama (Japan), 2023.

F) Special lectures in academic meetings

1. Prosthetic treatment and nutrition considering changes in life stages: Yoshikawa Mineka, Japan Prosthodontic society Tohoku/Hokkaido Branch, Lifelong learning seminar Prosthodontic dentistry protecting “Nutrition intake”and “Tasty”
2.

distribution of oral resistant bacteria and the impact of oral hygiene management by dentists on medical/nursing-related pneumonia, Assignment number 20K10248 3,700,000

11: Grants-in-Aid for Scientific Research (Grant-in-Aid for Research Activity Start-up): Does the use of disinfectants and antimicrobials in the oral cavity cause disinfectant resistance, Assignment number 23K19745. 1,100,000

12: MEXT Grant-in-Aid for Early-Career Scientists Hiraoka A New development of posture-maintaining orthosis useful for preventing low back pain during dental treatment for long-term care recipients (Grant No. 20K18806) 1,800,000

13: Hiroshima Prefecture “Bio Design Program Operating Expenses Subsidy” - Seed and Needs Exploration Research Grant: Mariko Maruyama: Development of a Resident Simulation System (RSS) for Dentistry 500,000

(5) Academic Awards, etc.

(6) Patents

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(1) Staff and Students

Professor : Kazuhiro Tsuga
Associate Professor : Kazuya Doi
Assistant Professor : Koji Morita, Yusuke Makihara, Keisuke Yasuda, Miyuki Yokoi
Resident : Kazuko Kagawa, Hitomi Kimura, Chiho Takeda
Graduate Student : Yuhei Hashimoto, Kaien Wakamatu, Chihiro Yoshiga, Masayasu Kato, Shio Maruyama
Research Fellow :Reiko Kobatake
Researcher : Hitoshi Abekura
Administrative staff : Rinko Kurumi

(2) Main Research Activities

1: Basic research on PEEK materials for dental applications and clinical research on PEEK crowns for molars
2: Colonization survey of drug-resistant bacteria in long-term care facilities
3: Implementation of tongue resistance training for the elderly and verification of its effect
4: Relationship between eating behavior and oral function in healthy young people
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8: Establishment of a new oral hygiene assessment method using an IOS
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11: Establishment of a new dysphagia evaluation method using a portable ultrasound diagnostic device
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(3) Research Achievements

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1: Comparative implant stability of a novel implant-porous titanium complex and an implant-porous hydroxyapatite complex for bone reconstruction material: Kobatake R, Doi K, Wakamatsu K, Oki Y, Morita K, Tsuga K.: Original: Journal of Hard Tissue Biology, 32(3):177-182, 2023.
2: A case report of oral hygiene evaluation using intraoral scanner: Yoshiga C, Doi K, Kawagoe M, Oue H, Kobatake R, Umehara H, Tsuga K: The journal of Hiroshima University Society, 55(2):138-142, 2023.
3: Investigation of the utility of dental plaque detection using intraoral scanner images: Yoshiga C, Doi K, Oue H, Kobatake R, Kawagoe M, Umehara H, Tsuga K: Imaging Science in Dentistry, in press.
4: A case report of oral function restoration by dental implant treatment for missing unilateral mandibular distal-extensions Doi K Ann Jpn Prosthodont Soc 15 : 575-578, 2023
5: Radiopaque properties of PEEK crown Fumiko Nishio, Koji Morita, Kazuya Doi, Masamichi Kato, Hitoshi Abekura, Hidehisa Yamaoka, Naoya Kakimoto, Kazuhiro Tsuga J Oral Biosci. S1349-0079(23)00073-7 Online ahead of print.2023.
6: Current Opinions and Perspectives on Insurance CAD/CAM Crowns): Hitoshi Abekura, Miyuki Yokoi, Kazuko Kagawa, Fumiko Nishio, Shogo Iwaguro, Ryoji Kaou, Kazuhiro Tsuga: The Journal of Hiroshima University Dental Society.55,17-30.2023.
7: Antimicrobial adhesive polyurethane gel sheet with cetylpyridinium chloride-montmorillonite for facial and somato prosthesis fastening: Nakamori K, Abe Y, Takeuchi M, Kagawa K, Yoshihara K, Yoshida Y, Tsuga K: J Prosthodont Res. 2023 Apr 12;67(2):180-188.

8: Developmental impairments of craniofacial bone and cartilage in transgenic mice expressing FGF10.

Congress 2023, Yokohama (Japan), 2023.

13: The effect of experimental tooth loss on gut microbiota and cognitive function in mice: Takashi Ogino, Miyuki Yokoi, Hiroshi Oue, Rie Hatakeyama, Yuhei Hashimoto, Eri Ishida, Kazuhiro Tsuga: The 62nd Hiroshima Prefectural Dental Association The 107th Annual Meeting of Hiroshima University Dental Society, 2023.

14: Relationship between oral function and “fast eating”: Yokoi M, Hiraoka A, Takeuchi M, Maruyama M, Takeda C, Haruta A, Takahashi Y, Yoshikawa M, Yoshida M, Tsuga K: The 34th Annual meeting of the Japanese society of Japanese Society of Gerodontology, Yokohama (Japan), 2023.

15: Effects of tongue training using medical tongue training equipment on tongue pressure in early older adults: Takeuchi M, Yoshikawa M, Yokoi M, Kagawa K, Takeda C, Takahashi Y, Haruta A, Hiraoka A, Oue H, Tsuga K: IAGG Asia/Oceania regional congress, Yokohama (Japan), 2023.

F) Special lectures in academic meetings

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Program for Deveroping and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Wakamatsu K: Development of a novel bone density evaluation method by high precision cutting torque value measurement. 400,000

2: Program for Deveroping and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yoshiga C: Establishment of an AI digital oral health assessment method for preemptive prevention. 400,000

3: MEXT Grant-in- Aid for Young Scientists: Kobatake R: Novel development of bone reconstruction material / dental implant complex. (Grant No. 21K17043). 2,730,000.

4:

(1) Staff and Students

Professor: Kotaro Tanimoto
Associate Professor: Ryo Kunimatsu, Naoto Hirose
Assistant Professor: Yuki Asakawa, Yuki Yoshimi, Takaharu Abe, Makoto Yanoshita, Isamu Kado, Shota Ito
Intern: Koji Iwai, Sakura Yamada, Kazuyo Ando, Shuzo Sakata, Ayaka Nakatani, Sayuri, Nishiyama, Yuma Koizumi, Kazutaka Ikeda, Tomohiro Ogasawara, Eri Tsuboi, Kodai Rikitake, Naoki Kubo
Graduate Student: Kanae Oda, Fumika Abe, Shintaro Ogashira, Ayaka Odo, Risako Oshiro, Saki Ogawa, Daiki Kita, Katsuhito Sugai, Izumi Tanabe, Shun Ogata, Naonobu Okimura, Ami Ono, Rio Shibata, Saki Takesue, Minori Nakazato, Ryosuke Nakajima, Shina Pasanen, Reina Hatano, Akira Hirabae, Kanako Okazaki, Erika Odake, Marino Yoshida
Visiting Professor: Kazuo Tanne (~2023.3), Eiji Tanaka, Ichiro Takahashi, Shoichi Miyawaki
Registered Intern: Kuniaki Tanaka, Kazunori Itatani, Shoutoku Kojima, Aya Kimura, Azusa Onishi, Jin Izumino, Hiroki So, Tomoka Hiraki, Ayana Nakano
Dental Hygienist: Miho Okada, Mariko Nakamura ~2023.7

(2) Main Research Activities

1: Elucidation of pathogenic mechanism in malocclusion and management of oral maxillofacial skeletal growth
2: Optimization of tooth movement by orthodontic force
3: Establishment of a new orthodontic treatment based on the image and biochemical diagnosis of temporomandibular disorders (TMD)
4: Application of regeneration medicine to orthodontic treatment
5: Suppression of caries risk in orthodontic treatment
6: Evaluation of the contribution of various oral functions to general fitness
7: Development of new instruments and materials for orthodontic treatment

(3) Research Achievements

A) Original Papers (2023.1-2023.12 including Case Reports)

1 Stem cell-derived from human exfoliated deciduous teeth-based media in a rat root resorption model Odo A., Kunimatsu R., Abe T., Sakata S., Nakatani A., Rikitake K., Koizumi Y., Tanabe I., Yoshimi Y., Okimura N., Tanimoto K. Arch Oral Biol. 158:105854, 2023. doi:0.1016/j.archoralbio.2023.105854
2 Isolation of Streptococcus mutans temperate bacteriophage with broad killing activity to S. mutans clinical isolates Sugai K, Kawada-Matsuo M, Mi Nguyen-Tra Le, Sugawara Y, Hisatsune J., Fujiki J., Iwano H., Tanimoto K., Sugai M., Komatsuzawa H.: iScience. 14;26(12):108465, 2023. doi: 10.1016/j.isci.2023.108465
3 Diversity and Standard Nomenclature of Staphylococcus aureus Hyaluronate Lyases HysA and HysB Hisatsune J., Koizumi Y., Tanimoto K., Sugai M Microbiol Spectr., 17;11(4):e0052423, 2023. doi: 10.1128/spectrum.00524-23
4 Vasoactive intestinal peptide receptor 2 signaling promotes breast cancer cell proliferation by enhancing the ERK pathway Asanoa S., Ono A., Sakamoto K., Hayata-Takano A., Nakazawa T., Tanimoto K., Hashimoto H., Ago Y.: Peptides, 161, 2023
5 Effect of Er: YAG laser irradiation on bone metabolism-related factors using cultured human

osteoblasts Tsuka Y., Kunimatsu R., Sakata S., Nakatani A., Kado I., Ito S., Putranti NAR., Ohshima S., Tanimoto K.: J Laser Med Sci. 14:e9, 2023. doi: 10.1177/09727531231156505

6 Effects of peripheral nerve injury on the induction of c-Fos and phosphorylated ERK in the brainstem trigeminal sensory nuclear complex Terayama R., Tsuji K., Furugen H., Duong M., Nakatani A., Uchibe K.: Ann. Neurosci. 30(3):177–187, 2023. doi:10.1177/09727531231156505

7 Image preprocessing with contrast-limited adaptive histogram equalization improves the segmentation performance of deep learning for the articular disk of the temporomandibular joint on magnetic resonance images Yoshimi Y., Mine Y., Ito S., Takeda S., Okazaki S., Nakamoto T., Nagasaki T., Kakimoto N., Murayama T., Tanimoto K.: Oral Radiol. 14:S2212-4403(23)00117-7, 2023. doi:10.1016/j.oooo.2023.01.0

8 Bone Differentiation Ability of CD146-Positive Stem Cells from Human Exfoliated Deciduous Teeth Kunimatsu R., Rikitake K., Yoshimi Y., Putranti NAR., Hayashi Y., Tanimoto K.: Int J Mol Sci. 17;24(4):4048, 2023. doi:10.3390/ijms24044048

9 Camouflage Correction of Skeletal Class III Severe Open Bite with Tooth Ankylosis Treated by Temporary Anchorage Devices A Case Report Yashima Y., Kaku M., Yamamoto T., Cynthia CM., Ono S., Takeda Y., Tanimoto K.: Dent J. 21;11(4):107, 2023. doi:10.3390/dj11040107

10 The physiological function of deglutition and swallowing in patients with maxillary protrusion after mandibular advancement Kaku M., Kagawa H., Yamamoto T., Kojima S., Kamiya T., Shimoe S., Mine Y., Murayama T., Yamamoto I., TanimotoK.: J. Craniofac. Surg. 1;34(7):1966-1970, 2023. doi:10.1097/SCS.0000000000009479

11 Comparison of Orthodontic Tooth Movement of Regenerated Bone Induced by Carbonated Hydroxyapatite or Deproteinized Bovine Bone Mineral in Beagle Dogs Abe T., Kunimatsu R., Tanimoto K.: Materials 17(1),112, 2023. doi: 10.3390/ma17010112.

12 High-frequency near-infrared semiconductor laser irradiation suppressed experimental tooth movement-induced inflammatory pain markers in the periodontal ligament tissues of rats Nakatani A., Kunimatsu R., Tsuka Y., Sakata S., Ito S., Kado I., Putranti NAR., Terayama R., Tanimoto K.: Lasers Med Sci. 38(1), 109,2023. doi: 10.1007/s10103-023-03761-x.

13 A case of malocclusion with severe trismus and deformities of condyles treated with a comprehensive approach : Hirose N., Yanoshita M., Onishi A., Nishiyama S., Kubo N., Kita D.,Tsuboi E., Asakawa Y., Tanimoto K.: J. Jpn Soc T.M.J., 35(1) 1-20, 2023

14 Relationship between postoperative changes in long term of maxillary protrusion and temporomandibular joint disorder after mandibular advancement surgery Asakawa Y.: Chu-shi. Orthod. Soc., 35(1), 7-14, 2023.

15 A survey of surgical orthodontics for maxillary protrusion in the department of orthodontics, Hiroshima university hospital for the past 30 years. Sakata S., Asakawa Y., Yoshimi Y., Kunimatsu R., Ikeda K., Rikitake K., Tanimoto K. J. Chu-shi. Orthod. Soc., 35(1), 97-104, 2023.

16 MIR125B-5p Derived from the Mir125b-1 Gene Negatively Regulates Osteoblast Differentiation Shintaro O.: J. Hiroshima Univ. Dent. Soc : 55(2), 85-93, 2023.

17 Transcriptomic profiling of mouse vascular smooth muscle cells: Insights into calciprotein particle-induced calcification Risako O.: J. Hiroshima Univ. Dent. Soc., 55(2), 102-115, 2023.

18 A Case of Skeletal Maxillary Protrusion Treated with Bilateral Maxillary First Molar Extraction in Orthodontics Nakajima K., Kunimatsu R., Tanimoto K : J. Hiroshima Univ. Dent. Soc., 55(2), 130-137, 2023.

B) Review (2023.1-2023.12)

C) Publications (2023.1-2023.12)

D) Other Publications (2023.1-2023.12)

E) Presentations at Scientific Meetings (2023.1-2023.12)

1 RadImageNet as a dataset of transfer learning in dental image assessment　Okazaki S., Mine Y., Ito S., Yoshimi Y., Takeda S., Tanimoto K., Murayama T.　The 14th Scientific Meeting of the Japan Dental Academy of Digital Dentistry (Kanagawa), 2023.

2 Comparison of pre-trained convolutional neural networks for skeletal pattern prediction from facial photographs　Yoshimi Y., Mine Y., Ito S., Okazaki S., Hase S., Takeda S., Murayama T., Tanimoto K.　The 14th Scientific Meeting of the Japan Dental Academy of Digital Dentistry (Kanagawa), 2023.

3 Detecting the articular disc of temporomandibular joint on MRI images using object detection AI model　Sano M., Mine Y., Yoshimi Y., Okazaki S., Ito S., Takeda S., Tanimoto K., Murayama T.　The 14th Scientific Meeting of the Japan Dental Academy of Digital Dentistry (Kanagawa), 2023.

4 Gender determination and feature visualization on lateral cephalograms using deep learning approach　Hase H., Mine Y., Okazaki S., Ito S., Yoshimi Y., Takeda S., Tanimoto K., Murayama T.　The 14th Scientific Meeting of the Japan Dental Academy of Digital Dentistry (Kanagawa), 2023.

5 Role of the VPAC2 receptor overactivation implicated in schizophrenia susceptibility　Ono A., Koan D., Asano S., Nakagawa S., Waschek J.A., Tanimoto K., Ago Y.: 56th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2023.

6 Structure and function of engineered stromal cell-derived factor-1　Abe F., Nakano A., Hirata I., Tanimoto K., Kato K.　56th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2023.

7 The surgical strategy of reconstruction for temporomandibular joint　Odan K., Ono S., Nakagawa T., Mizuta K., Ishida Y., Uetsuki R., Sasaki K., Sakuma M., Fukada S., Hirose N., Asakawa Y., Yanoshita M., Nishiyama S., Tsuboi E., Kubo N., Kaku M., Tanimoto K., Aikawa T.　56th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2023.

8 Basic study for alveolar cleft closure using SHED and carbonate apatite　Kunimatsu R., Rikitake K., Yoshimi Y., Abe T., Tanimoto K.: The 47th Annual Meeting of Japanese Cleft Palate Association (Tokyo), 2023.

9 Examination of osteogenic differentiation potential of CD146-positive deciduous dental pulp-derived mesenchymal stem cells　Rikitake K., Kunimatsu R., Yoshimi Y., Abe T., Tanimoto K.: The 47th Annual Meeting of Japanese Cleft Palate Association (Tokyo), 2023.

10 A relationship between idiopathic condylar resorption of the temporomandibular joint and jaw deformities　Tanimoto K., Kunimatsu R., Asakawa Y., Yoshimi Y., Hirose N.: The 33th Annual Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2023.

11 Investigation of the effect of mandibular advancement orthognathic surgery on the morphology of the upper-airway　Kunimatsu R., Sakata S., Asakawa Y., Yoshimi Y., Abe T., Iwai K., Ikeda K., Rikitake K., Tanimoto K.: The 33th Annual Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2023.

12 Long-term postoperative stability of maxillary protrusion following mandibular advancement surgery　Asakawa Y., Sakata S., Yoshimi Y., Ikeda K., Rikitake K., Hirose N., Kunimatsu R., Tanimoto K.: The 33th Annual Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2023.

13 Clinical statistical survey of orthognathic patients for 30 years in Hiroshima University Hospital Orthodontics　Yoshimi Y., Asakawa Y., Sakata S., Rikitake K., Ikeda K., Hirose N., Kunimatsu R., Kotaro Tanimoto K.: The 33rd Annual Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2023.

14 Comparison of masticatory muscle composition before and after orthognathic surgery for skeletal class 2 patients　Sakata S., Asakawa Y., Yoshimi Y., Kunimatsu R., Ikeda K., Rikitake K., Tanimoto K.: The 33rd Annual Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2023.

15 Clinical Invastigation of patient trends at Hiroshima University Hospital Cleft and Craniofacial Center during the first six years after the center's establishment　Ogasawara T., Yoshimi Y., Kado I., Ito S., Asakawa Y., Hirose N., Tanimoto K.: The 66th Annual Meeting of the Chu-Shikoku Orthodontic Society (Tokushima), 2023.

16 Clinical statistical research on development of temporomandibular disorders in children at orthodontic

clinic, Hiroshima University Hospital Tsuboi E., Hirose N., Asakawa Y., Yanoshita M., Nishiyama S., Kubo N., Kita D., Takesue S., Nakazato M., Nakazima R., Tanimoto K.: The 66th Annual Meeting of the Chu-Shikoku Orthodontic Society (Tokushima), 2023.

17 Bone structure analysis of the mandibular condyle in patients with jaw deformity and lateral mandibular deviation Ikeda K., Asakawa Y., Yoshimi Y., Sakata S., Rikitake K., Kunimatsu R., Tanimoto K: The 66th Annual Meeting of the Chu-Shikoku Orthodontic Society (Tokushima), 2023.

18 A case of surgical orthodontics for a patient with severe maxillary protrusion after treatment of TMD Yanoshita M., Hirose N., Nishiyama S., Tsuboi E., Kubo N., Kita D., Takesue S., Nakazima R., Nakazato M., Tanimoto K.: The 36th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), 2023.

19 A case an orthodontic approach was investigated for OSA associated with language development delay in an infant Abe T., Sakata S., Iwai K., Kunimatsu R., Kiyohara Y., Kumagai H., Tanimoto K., Shiomi T.: Joint Congress: the 45th Annual Meeting of Japanese Society of Sleep Research/The 30th Annual Meeting of Japanese Society for Chronobiology (Kanagawa), 2023.

20 Outcome of oral myofunctional therapy concurrent with orthodontic treatment for children with Noonan's syndrome : Ando K., Asakawa Y., Okada M., Yamada S., Yamoto S., Nakatani A., Tanimoto K. The 21th Annual Meeting of the Japan Society for Oral Myofunctional Therapy (Tokyo), 2023

21 Effect of human deciduous dental-pulp-derived MSCs-derived conditioned medium on the metabolism of osteoblast and BMSCs Kunimatsu R., Hiraki T., Rikitake K., Sakata S., Abe T., Ando K., Nakatani A., Tanimoto K.: The 82th Annual Meeting of the Japanese Orthodontic Society (Niigata), 2023.

22 Management of maxillary protrusion with concurrent root resorption during orthodontic treatment (case1) Hirose N., Yanoshita M., Nishiyama S., Kubo N., Kita D., Nakazima R., Nakazato M., Takesue S., Iwai K., Tanimoto K.: The 82th Annual Meeting of the Japanese Orthodontic Society (Niigata), 2023.

23 Management of maxillary protrusion with concurrent root resorption during orthodontic treatment (case2) Yanoshita M., Hirose N., Kubo N., Nishiyama S., Kita D., Takesue S., Nakazima R., Nakazato M., Iwai K., Tanimoto K.: The 82th Annual Meeting of the Japanese Orthodontic Society (Niigata), 2023.

24 The analysis of oral microbiome and classification of caries risk by CAMBRA in Hiroshima university hospital Kado I., Kunimatsu R., Yoshimi Y., Yamada S., Koizumi Y., Ogasawara T., Tanimoto K. The 82th Annual Meething of the Japanese Orthodontic Society (Niigata), 2023.

25 Evaluation about correlation between classification of malocclusion and caries risk by saliva test Koizumi Y., Kunimatsu R., Yoshimi Y., Kado I., Yamada S., Ogasawara T., Tanimoto K.: The 82th Annual Meeting of the Japanese Orthidontic Society (Niigata), 2023.

26 High-frequency semiconductor laser irradiation enhances osteogenic differentiation of human cementoblast lineage cells Nakatani A., Kunimatsu R., Sakata S., Tsuka Y., Miyauchi M., Takata T., Tanimoto K.: The 82th Annual Meeting of the Japanese Orthodontic Society (Niigata), 2023.

27 A case of displaced maxillary canine tooth germs treated with rapid maxillary expansion in sages Suzuki Y., Kuroe K. Naito M., Nakano M., Tanimoto K. The 82th Annual Meeting of the Japanese Orthodontic Society (Niigata), 2023.

28 A case of impacted mandibular right second molar caused by odontoma Ito S., Abe T., Cynthia CM., Koizumi Y., Hamada M., Yanamoto S., Tanimoto K.: The 62th Scientific Meeting of Hiroshima Prefectural Dental Association and 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.

29 Automated prediction of a cephalometric parameter and feature visualization on lateral profile photographs using deep learning approach Aoe H., Mine Y., C06 Tw 006 Tw 0.38632.8 [Tw 2.205 0 Td[(A)1.9 Y deY2

31 A case of displaced maxillary canine tooth germs treated with rapid maxillary expansion in sages Suzuki Y., Kawamoto M., Takeda N., Waki Y., Osugi S., Sugai T., Suzuki Y., Nakajima K., Yoshida M., NakanoM., Tanimoto K., Nishimura R., Naito M. The 62th Scientific Meeting of Hiroshima Prefectural Dental Association and 107th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2023.

32 First isolation of a novel temperate bacteriophage specifically killing activity against Streptococcus mutans clinical isolates Katsuhito S., Miki K., Mi N., Yo S., Junzo H., Jumpei F., Hidetomo I., Kotaro T., Motoyuki S., Hitoshi K. the 65th academic conference of Oral Biosciences (Tokyo), 2023. Association for Oral Biology (Tokyo), 2023.

33 Development of a mouse model of neuron-specific VIPR2 overexpression to uncover the schizophrenia susceptibility Ono A., Asano S., Ago Y.: The 65th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2023.

34 Development of a mouse model of neuron-specific VIPR2 overexpression to uncover the schizophrenia susceptibility Ono A., Imado E., Ago Y.: The 40th Annual Meeting of the Japanese Society for Disability and Oral Health (Hokkaido), 2023.

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3. Kubo N., Awada T., Hirose N., Yanoshita M., Takano M., Nishiyama S., Tsuboi E., Kita D., Ito S., Nakatani A., Onishi A., Asakawa Y., Tanimoto K. Longitudinal effects of estrogen on mandibular growth and changes in cartilage during the growth period in rats The 26th Japanese Orthodontic Society Academic Encouragement Award.
4. Tsuboi E., Hirose N., Asakawa Y., Yanoshita M., Nishiyama S., Kubo N., Kita D., Takesue S., Nakazato M., Nakazima R., Tanimoto K.: Clinical statistical research on development of temporomandibular disorders in children at orthodontic clinic, Hiroshima University Hospital. The 66th Annual Meeting of the Chu-Shikoku Orthodontic Society Poster Award
5. Suzuki Y., Kuroe K., Naito M., Nakano M., Tanimoto K. A case of displaced maxillary canine tooth germs treated with rapid maxillary expansion in sages The 82th Annual Meeting of the Japanese Orthodontic Society Excellent Presentation Award

(6) Patents

1. Bacteriophage and its use, Patent (21091) Hitoshi K., Miki K., Mi N., Katsuhito S., Yo S., Junzo H., Jumpei F., Hidetomo I., Kotaro T., Motoyuki S.

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(1) Staff and Students

Professor : Naoya Kakimoto
Associate Professor : Takashi Nakamoto
Associate Professor/Lecturer : Yoshikazu Suei, Masaru Konishi
Assistant Professor : Toshikazu Nagasaki, Masahiko Ohtsuka, Kiichi Shimabukuro

(2) Main Research Activities

1: Radiographic diagnosis of oral diseases
2: Radiographic study on mandibular osteomyelitis
3: Study of radiation dosimetry in X-ray region for diagnosis
4: Study on the videofluoroscopic examination of swallowing
5: Improvement of treatment results in the radiotherapy for oral cancers
6: Radiographic study to screen osteoporosis using panoramic radiographs of the jaw
7: Study on taste disorder with oral cancer patients after radiotherapy
8: Quantitative analysis of temporomandibular joint on MRI

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Cone-beam computed tomography-based investigation of pre-eruptive intracoronal resorption prevalence: Shimabukuro K, Konishi M, Wongratwanich P, Nagasaki T, Ohtsuka M, Suei Y, Nakamoto T, Kakimoto N.: Odontology. 112(1):256-263. 2023. doi: 10.1007/s10266-023-00824-x.
2: Investigation of changes in oral conditions and body weight ofolder residents in an aged care nursing home: Konishi M, Kakimoto N. Int J Gerontology.: 17(1): 19-24. 2023.
3: Effectiveness of spacers in brachytherapy with ^{198}Au grains for patients with buccal mucosa cancer. Konishi M, Hirokawa J, Miyoshi S, Katsuta T, Imano N, Nishibuchi I, Murakami Y, Shimabukuro K, Nakashima T, Takeuchi Y, Kakimoto N, Nagata Y.: Anticancer Res. 43(5):2265-2271. 2023.
4: Subjective and objective assessments of sweet, umami, and bitter tastes after brachytherapy for patients with tongue cancer. Konishi M, Shimabukuro K, Kakimoto N. Oral Science International. First published: 23 April 2023. https://doi.org/10.1002/osi2.1187.
5: Radiomics analysis of intraoral ultrasound images for prediction of late cervical lymph node metastasis in patients with tongue cancer. Konishi M, Kakimoto N. Head Neck. 45(10):2619-2626. 2023.
6: Ultrasonographic features of mass lesions in the oral submucosal epithelium using intraoral ultrasonography. Konishi M, Ando T, Miyauchi M, Kakimoto N. Head Neck. 45(11):2829-2838. 2023.
7: Videofluoroscopic analysis of the laryngeal movement of older adults in swallowing. Konishi M, Nagasaki T, Kakimoto N. Odontology. 2023. doi: 10.1007/s10266-023-00852-7.
8: Can oral diadochokinesis be used as an assessment tool of oral function in older adults requiring care in nursing home? Konishi M. J Oral Rehabil. 2023. doi: 10.1111/joor.13594.
9: Retrospective analysis of tooth extraction and osteoradionecrosis after low-dose rate brachytherapy for patients with tongue cancer. Oral Radiol. 2023. doi: 10.1007/s11282-023-00716-4.
10: Radiation doses of medical radiation workers performing low-dose-rate brachytherapy with ^{198}Au grains and ^{192}Ir pins for patients with oral cancers. Konishi M, Shimabukuro K, Hirokawa J, Sadatoki T, Katsuta T, Imano N, Nishibuchi I, Murakami Y, Kakimoto N. Oral Radiol. 2023. doi: 10.1007/s11282-023-00728-0.
11: Head and neck cancer patients show poor oral health as compared to those with other types of cancer. Nishi H, Obayashi T, Ueda T, Ohta K, Shigeishi H, Munenaga S, Kono T, Yoshioka Y, Konishi M,

Taga R, Toigawa Y, Naruse T, Ishida E, Tsuboi E, Oda K, Dainobu K, Tokikazu T, Tanimoto K, Kakimoto N, Ohge H, Kurihara H, Kawaguchi H. BMC Oral Health. 6;23(1):647. 2023.

12: Efficacy of Low-Level Laser Therapy for Oral Mucositis in Hematologic Patients Undergoing Transplantation: A Single-Arm Prospective Study. Nishi H, Horikoshi S, Ohta K, Yoshida T, Fukushima N, Oshita K, Munenaga S, Edahiro T, Ureshino H, Shigeishi H, Yoshioka Y, Konishi M, Ide N, Ogawa Y, Marukawa R, Shintani T, Ino N, Kajiya M, Kakimoto N, Ohge H, Ichinohe T, Kawaguchi H. J Pers Med. 13(11):1603.2023.

13: Ghost cell odontogenic carcinoma arising in dentinogenic ghost cell tumor, peripheral: A case report. Sakamoto S, Ando T, Mizuta K, Ono S, Konishi M, Miyauchi M, Ogawa I. Pathol Int.;73(8):367-372.2023.

14: Dental radiographic information of term newborn babies within the first month: Analyzing five radiographic cases along with physical attributes in Japan: Oka H, Asao Y, Nakao N, Mitsuhata C, Matsumoto Y, Nomura R, Kakimoto N, Nagao M, Kozai K.: Leg Med (Tokyo), 60:102171, 2023. doi: 10.1016/j.legalmed.2022.102171.

15: Image preprocessing with contrast-limited adaptive histogram equalization improves the segmentation performance of deep learning for the articular disk of the temporomandibular joint on magnetic resonance images.: Yoshimi Y, Mine Y, Ito S, Takeda S, Okazaki S, Nakamoto T, Nagasaki T, Kakimoto N, Murayama T, Tanimoto K.: Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology, 14:S2212-4403(23)00117-7. 2023. doi: 10.1016/j.oooo.2023.01.016.

16: Age estimation using post-mortem computed tomography and fetal dental radiographic findings in an early to mid-pregnancy fetus: a case report.: Oka H, Asao Y , Ohbayashi N, Nakao N, Ishiuchi N, Fukumoto W, Matsumoto Y, Kakimoto N, NagaoM, Kozai K.: Leg Med (Tokyo), 62:102232. 2023. i: 10.1016/j.legalmed.

17: Radiopaque properties of polyetheretherketone crown at laboratory study.: Nishio F, Morita K, Doi K, Kato M, Abekura H, Yamaoka H, Kakimoto N, Tsuga K.: J Oral Biosci., 65(3):253-258., 2023 doi: 10.1016/j.job.2023.05.002.

18: Impact of neck percutaneous interferential current sensory stimulation on swallowing function in patients with Parkinson's disease: A single-arm,open-label study protocol.: Nakamori M, Toko M, Yamada H, Hayashi Y, Yoshikawa K, Yoshikawa M, Nagasaki T, Hiraoka A, Shimizu Y, Mikami Y, Maruyama H.; Cotemp Clin Trials Common, 33:101158, 2023. doi: 10.1016/j.conctc.2023.101158.

19: Swallowing sound index analysis using electronic stethoscope and artificial intelligence for patients with Parkinson's disease.: Nakamori M, Shimizu Y, Takamashi T, Toko M, Yamada H, Hayashi Y, Ushio K, Yoshikawa K, Hiraoka A, Yoshikawa M, Nagasaki T, Mikami Y, Maruyama H.; J Neurol Sci., 454:120831, 2023. doi: 10.1016/jns.2023.120831.

20: Detailed findings of videofluoroscopic examination among patients with Parkinson's disease on the effect of cervical percutaneous interferential current stimulation.: Nakamori M, Toko M, Yamada H, Hayashi Y, Haruta A, Hiraoka A, Yoshikawa M, Nagasaki T, Ushio K, Yoshikawa K, Shimizu Y, Mikami Y, Maruyama H.; Front Neurol., 14:1279161, 2023. doi: 10.3389/fneur.2023.1279161.

21: Association between motor symptoms of Parkinson's disease and swallowing disorders.: Nakamori M, Toko M, Yamada H, Hayashi Y, Ushio K, Yoshikawa K, Hiraoka A, Yoshikawa M, Nagasaki T, Mikami Y, Maruyama H.; Neurol Sci., 2023. doi: 10.1007s10072-023-1.

E) Presentation at Scientific Meeting

1: Maxillary tumor (Juvenile psammomatoid ossifying fibroma and odontoma associated with Sturge-Weber syndrome): Furusho H, Satou A, Matsumura T, Nakano M, Sawaki K, Yoshioka Y, Akashi S, Mizukawa N, Iida S, Kakimoto N, Miyauchi M.: Histopathological conference in Hiroshima (Hiroshima), 2023.

2: Quantitative evaluation of pulp chamber area in X-linked hypophosphatemia rickets patients using orthopantomographic imaging: Takagi M, Matayoshi S, Nakamoto T, Okawa R, Kakimoto N, Nakano K. The 61st congress of Japanese Journal of Pediatric Dentistry (Nagasaki), 2023.

3: Radiomics for prediction of late cervical lymph node metastasis in patients with tongue cancer by intraoral ultrasonographic images: Konishi M, Shimabukuro K, Kakimoto N. The 63rd congress of Japanese Society of Oral and Maxillofacial Radiology (Fukuoka), 2023.

4: Screening for osteoporosis by panoramic radiographs – agreement of mandibular inferior cortical classification between oral radiologist and dental students: Osanai H, Kuroiwa H, Yamada S, Sugino N, Nakamoto T, Ohtsuka M, Suei Y, Kakimoto N, Taguchi A. The 63rd congress of Japanese Society

of Oral and Maxillofacial Radiology (Fukuoka), 2023.

5: An attempt to quantify the amount of residual test food (contrast agent) in video-fluoroscopic examination - a pilot study: Nagasaki T, Yamada S, Yoshikawa M, Shimabukuro K, Ohtsuka M, Suei Y, Konishi M, Nakamoto T, Kakimoto N. The 63rd congress of Japanese Society of Oral and Maxillofacial Radiology (Fukuoka), 2023.

6: A case report of Cemento-ossifying fibroma and odontoma associated with Sturge-Weber syndrome in the jaw: Furusho H, Satou A, Matsumura T, Nakano M, Sawaki K, Yoshioka Y, Akashi S, Mizukawa N, Iida S, Kakimoto N, Miyauchi M.: 21st International Congress of Oral Pathology and Medicine (Taipei), 2023.

7: Mandibular Cyst: Kataoka N, Ando T, Asada Y, Fukutani T, Tani R, Suei Y, Kakimoto N, Yanamoto S, Miyauchi M, Kajiya M. the 142nd meeting of The Japanese Society of Pathology, Chugoku-Shikoku branch (Web), 2023

8: Gender estimation and feature visualization from lateral cephalography using deep learning models.: Nagatani S, Mine Y, Okazaki S, Yoshimi Y, Ito S, Takeda S, Kakimoto N, Tanimoto K, Murayama T. The 107th Hiroshima University Dental Associations and 62nd Hiroshima Prefectural Dental Society (Hiroshima), 2023.

9: Skeletal angle prediction and feature visualization from facial photographs using deep learning. Aoe H, Mine Y, Ito S, Yoshimi Y, Okazaki S, Takeda S, Kakimoto N, Tanimoto K, Murayama T. The 107th Hiroshima University Dental Associations and 62nd Hiroshima Prefectural Dental Society (Hiroshima), 2023.

10: A case of lower lip cancer patient treated with 198Au grains mold technique: Konishi M, Shimabukuro K, Kakimoto N: The 42nd annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Fukuoka), 2023.

11: A case of upper lip cancer with perineural invasion: Okada T, Suei Y, Yamasaki S, Shimabukuro K, Nagasaki T, Ohtsuka M, Konishi M, Nakamoto T, Yanamoto S, Kakimoto N: The 42nd annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Fukuoka), 2023.

12: A case of severe dysphagia after maxillary tumor surgery: Nagasaki Y, Yamada S, Yoshikawa M, Shimabukuro K, Ohtsuka M, Suei Y, Konishi M, Nakamoto T, Kakimoto N: The 4th Autumn Conference of Japanese Society for Oral and Maxillofacial Radiology (Osaka), 2023.

13: Analysis of motor unit using multi-channel electromyography of the neck muscles and evaluation of the effects of electrical stimulation in patients with Parkinson's disease: Nakamori M, Yoshikawa K, Toko M, Yamada H, Yoshikawa M, Nagasaki T, Maruyama HH: The 29th anual meeting of The Japanese Society of Dysphagia Rehabilitaion (Yokohama), 2023.

F) Special lectures in academic meetings

1: Radiation Therapy for oral cancer patients: Kakimoto N: The 41st Congress of Japanese Societ of Oral Oncology (Web), 2023.

2: Usefulness of intraoral ultrasonography in the treatment of oral cancer: Masaru Konishi: The 41st Congress of Japanese Societ of Oral Oncology (Web), 2023.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grant-in-aid for Early-Career Scientists: Konishi M., Mechanism of taste dysfunction and recovery after radiotheray. 20K18807, 700,000 JPY.

2: Joint research from Reasearch Center for Radiation Disaster Medical Science: Konishi M. Study on the mechanism of taste disorder from radiation. 100,000 JPY.

3: Research Grant (Nakanishi Co., Ltd): Doi K (Representative), Konishi M: Fundamental study for establishment of bone quality diagnosis system by bone cutting resistance value. 200,000 JPY.

4: Grant-in-aid for Scientific Research (C): Kakimoto N, Saito A, Nakamoto T, Konishi M, Quantitative dosimetry and dose distribution prediction modeling for high-dose-rate adaptive interstitial brachytherapy for oral cancer. 22K10219, 650,000 JPY

5: Grant-in-aid for Scientific Research (C): Okawa R., Ogaya Y., Kakimoto N., Nakamoto T., Nakano M., A Comprehensive Review of Dental Conditions in Patients with Bone System Diseases and Evaluation of New Therapeutic Agents in Dentistry, 21K10183, 25,000 JPY

6: 2023 Collaboration with Research Center for Biomedical Engineering, Domestic B, Research Center for Biomedical Engineering: Development of a multi-analysis dental radiography system using a CdTe

photosensitive detector. Iikubo M, Ishibata H, Sasaki K, Aoki T, Koike A, Kakimoto N. 140,000 JPY

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(1) Staff and Students

Professor: Hideki Shiba
Lecturer: Katsuhiro Takeda
Assistant Professor: Shizu Hirata-Tsuchiya, Noriko Saito, Kazuma Yoshida, Jun Nakanishi, Daisuke Furutama
Graduate Student: Tomoki Kumagai, Naoki Sadaoka, Tomoya Naruse, Tomoki Kawayanagi, Wang Chutian, Saki Nishihama, Ayaka Miyata, Takuya Arita
Research Student: Song Bingxin

(2) Main Research Activities

1: Biological regeneration of dentin/pulp complex and periapical tissues
2: Pulp regeneration by regulation of inflammation
3: Biological obturation of root canals at apical areas
4: Epidemiological studies and clinical trials on endodontics

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Public RNA-seq data-based identification and functional analyses reveal that MXRA5 retains proliferative and migratory abilities of dental pulp stem cells: Yoshida K., Suzuki S., Yuan H., Sato A., Hirata-Tsuchiya S., Saito M., Yamada S., Shiba H.: Sci Rep. 13: 15574, 2023.

2: Relationship between CD4+ T-cell counts at baseline and initial periodontal treatment efficacy in patients undergoing treatment for HIV infection: A retrospective observational study: Shintani T., Okada M., Iwata T., Kawagoe M., Yamasaki N., Inoue T., Nakanishi J., Furutama D., Takeda K., Ando T., Nakaoka M., Mizuno N., Fujii T., Kajiya M., Shiba H.: J Clin Periodontol, 50: 1520-1529, 2023.

3: Rare root canal morphology of maxillary second molars: A report of three cases: Nagahara T., Takeda K., Wada K., Naruse T., Shiba H.: Clin Case Rep. 11: e7547, 2023.

4: Extracellular Release of Citrullinated Vimentin Directly Acts on Osteoclasts to Promote Bone Resorption in a Mouse Model of Periodontitis: Shindo S., Pierrelus R., Ikeda A., Nakamura S., Heidari A., Pastore M.R., Leon E., Ruiz S., Chheda H., Khatiwala R., Kumagai T., Tolson G., Elderbashy I., Ouhara K., Han X., Hernandez M., Vardar-Sengul S., Shiba H., Kawai T.: Cells, 12:1109, 2023.

5: In Situ Raman Analysis of Biofilm Exopolysaccharides Formed in Streptococcus mutans and Streptococcus sanguinis Commensal Cultures: Pezzotti G., Ofuji S., Imamura H., Adachi T., Yamamoto T., Kanamura N., Ohgitani E., Marin E., Zhu W., Mazda O., Togo A., Kimura S., Iwata T., Shiba H., Ouhara K., Aoki T., Kawai T.: Int J Mol Sci, 24: 6694, 2023.

6: Retrospective study on the therapeutic efficacy of zinc acetate hydrate administration to patients with hypozincemia-induced dysgeusia: Shintani T., Ohta K., Ando T., Hayashido Y., Yanamoto S., Kajiya M., Shiba H.: BMC Oral Health, 23:159., 2023.

7: Regulation of osteogenesis in bone marrow-derived mesenchymal stem cells via histone deacetylase 1 and 2 co-cultured with human gingival fibroblasts and periodontal ligament cells:

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3: Cemental tear: Nagahara T., Wada K., Takeda k., Shiba H.: The 44th meeting of the Japan Endodontic Association (Tokyo), 2023.

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10: Mechanosensitive Piezo1 dysregulates macrophage's innate immune responses to *Porphyromunas gingivalis*: Kumagai T., Shindo S., Nakamura S., Takeda K., Shiba H., Kawai T.: The 158th meeting of the Japanese Society of Conservative Dentistry (Matsue), 2023.

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12: Involvement of Piezo1 mechanosensitive receptor in cellular senescence in periodontitis: Khademi A., Shindo S., Nakamura S., Kumagai T., Heidari A., Pastore R M., Leon E., Hernandez M., Sengul V S., Kawai T.: 2023 AADOCR/CADR Annual Meeting, Portland, OR, 2023.

13: Activation of Piezo1 in osteoclasts inhibits bone resorption in periodontitis: Shindo S., Nakamura S., Kumagai T., Heidari A., Pastore R M., Leon E., Chheda H., Khatiwala R., Hernandez M., Sengul V S., Kawai T.: 2023 AADOCR/CADR Annual Meeting, Portland, OR, 2023.

14: Possible Suppressive Effect of Inosine on RANKL-mediated Periodontal Bone Resorption: Pastore R M., Shindo S., Nakamura S., Heidari A., Bontempo A., Leon E., Kumagai T., Saleh I., Sengul V S., Kawai T.: 2023 AADOCR/CADR Annual Meeting, Portland, OR, 2023.

15: *P.gingivalis* Vesicles Polarize Monocyte-Linage-Commitment to Macrophage vs. Osteoclast Differentiation-Stage Dependently: Leon E., Nakamura S., Shindo S., Pastore R M., Han X., Huang S., Kumagai T., Ruiz S., Heidari A., Kawai T.: 2023 AADOCR/CADR Annual Meeting, Portland, OR, 2023.

16: S-PRG Downregulates Osteoclastogenesis: S-PRG's Possible Indication for Subgingival Caries: Chandra J., Nakamura S., Shindo S., Leon E., Kumagai T., Pastore R M., Heidari A., Kawai T.: 2023 AADOCR/CADR Annual Meeting, Portland, OR, 2023.

17: Role of Mechanosensitive Piezo1 receptor expressed on Macrophage in Periodontitis: Shindo S., Kumagai T., Nakamura S., Pastore R M., Leon E., Huang S., Han X., Kawai T.: IMMUNOLOGY2023TM, Washington, WA, 2023.

18: OC-STAMP-reactive IgG auto-antibody may upregulate osteoclastogenesis in association with elevated anti-*P. gingivalis* antibody: Nakamura S., Shindo S., Leon E., Kumagai T., Pastore R M., Ouhara K., Kawai T.: IMMUNOLOGY2023TM, Washington, WA, 2023.

19: Polymorphism of two ABC transporters involved in nukacin resistance: Sadaoka N., Matsuo M., Mi Nguyen-Tra Le., Komatsuzawa H.: The 65th Journal of Oral Biosciences (Tokyo), 2023.

20: Polymorphism of two ABC transporters involved in nukacin resistance: Sadaoka N., Takeda K., Shiba H.: The 159th meeting of the .9 (n)-51(n)12 (o)-1u (o)--17.CID 6 Ɐ4-4.1 (l)2. (en)8 (cesw)25.2 (o)04.1 (f)9167 (t)-9.1 (t)2.

1: Pursuing advancement of Endodontics toward the 100-year life: Takeda K.: Theme of Symposium 2: From past to present - Endodontics considered from the perspective of research, clinical practice, and education - : The 159th meeting of the Japanese Society of Conservative Dentistry (Hamamatsu), 2023.

2: Infection control: Shiba H.: Clinical workshop of Japan Endodontic Association (Osaka), 2023.

3: Key points of HIV infection you should know: H. Shiba: Hiroshima Prefectural Dental Association 3rd Annual Scientific Lecture (Hiroshima), 2023.

4: Implementation status of AIDS measures in the Chugoku-Shikoku block: Shiba H.: 26th Japan Society for HIV Dental Medicine, held on WEB, 2023.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc

1: Research grants: Grants for research received from Hiroshima Prefecture: Study on network-construction of dental practice for HIV infection. \3,000,000.

2: Grants-in aid for scientific research (B): Shiba H, Extension of healthy life expectancy through elucidating the mechanism of exacerbation of cerebral hemorrhage through PRIP by Cnm-positive cariogenic bacteria. #21H03120, \3,100,000.

3: Grants-in aid for scientific research (C): Takeda K, Development of the treatment of pulpitis, targeting the endoplasmic reticulum stress response. #23K09184, \1,100,000.

4. Japan Agency for Medical Research and Development : Project for Regenerative/Cellular Medicine and Gene Therapy (Non clinical): Takeda K (Co-investigator), Development of promising periodontal regenerative therapy using 3D grafting tissue fabricated by a bio-3D printer. \4,000,000.

5: Grants-in-Aid for Scientific Research (C): Tsuchiya S, Basic research for the development of endodontic treatment by regulating inflammation targeting Samd9l. #23K09168, \1,560,000.

6: Grant-in-Aid for Scientists Reseach (C): Saito N, Development of a Rapid Test for Bacteria in Root Canals Using Total Adenylate as an Indicator in Endodontics. #23K09169, ¥1,690,000.

7: Grant-in-Aid for Early-Career Scientists: Nakanishi J, Bone regeneration with bone supplementing materialmaterial that has the multi-functionality of hybrid recombinant phosphophoryn. #22K17059, \1,800,000.

8: Grant-in-Aid for Early-Career Scientists: Yoshida K, Development of novel vital pulp therapy with MXRA5. #22K17037, ¥1,600,000.

9: Grant-in-Aid for Early-Career Scientists: Furutama D, Effects and mechanisms of chronic inflammation caused by periodontitis on psychiatric disorders. #23K16023, ¥1,800,000.

10: JSPS Research Fellowship for Young Scientists: Kumagai T, Development of new treatment for rheumatoid arthritis related to Periodontitis by using specific inhibitors for PAD from periodontophathogenic bacteria. #22J12547, \800,000.

(5) Academic Awards, etc.

(6) Patents

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(1) Staff and Students

Professor: Ryota Nomura * Chief: Ryota Nomura (by-work)
Associate Professor: Chieko Mitsuhata
Assistant Professor: Meiko Tachikake, Yuko Iwamoto, Masashi Nakano, Tatsuya Akitomo, Yuria Asao
Resident: Tomoko Ogasawara (~Mar.)
Graduate Student: Satoru Kusaka, Momoko Usuda, Mariko Kametani, Masashi Ogawa (Apr.~), Ami Kaneki (Apr.~), Taku Nishimura (Apr.~)
Clinical Trainee: Fumiko Hayashi, Akira Yamane, Seiko Watanabe, Ami Okamine, Shuhei Kaneko

(2) Main Research Activities

1: Research on the effects of oral bacteria on systemic diseases
2: Bacteriological research of onset mechanism and prevention of dental caries in children
3: Bacteriological research in periodontal diseases in children
4: Clinical research in oral care in children suffering from systematic diseases
5: Evaluation of psychological stress in dental treatment in children
6: Dental approach to pediatric dysphagia
7: Investigation of oral status of Cambodian children
8: Research in oral environment and dental diseases in abused children

(3) Research Achievements

A) Original Papers (including Case Reports)

(*: corresponding author, #: equally contribution)

1: Dental radiographic information of term newborn babies within the first month: Analyzing five radiographic cases along with physical attributes in Japan: Oka H.[#], Asao Y.[#], Nakao N., Mitsuhata C., Matsumoto Y., Nomura R., Kakimoto N., Nagao M., Kozai K.: Legal Medicine, 60, 102171, 2023.
2: Harboring Cnm-expressing *Streptococcus mutans* in the oral cavity relates to both deep and lobar cerebral microbleeds: Ikeda S., Saito S., Hosoki S., Tonomura S., Yamamoto Y., Ikenouchi H., Ishiyama H., Tanaka T., Hattori Y., Friedland RP., Carare RO., Kuriyama N., Yakushiji Y., Hara H., Koga M., Toyoda K., Nomura R., Takegami M., Nakano K., Ihara M.: European Journal of Neurology, 30(11), 3487-3496, 2023.
3: Possible association of *fimA* genotype of *Porphyromonas gulae* with the severity of periodontal disease and the number of permanent teeth in dogs: Shirahata S., Iwashita N., Sasaki R., Nomura R., Murakami M., Yasuda J., Yasuda H., Nakajima K., Inaba H., Matsumoto-Nakano M., Nakano K., Uchiyama J., Fukuyama T.: Frontiers in Veterinary Science, 10, 1022838, 2023.
4: *cnm*-positive *Streptococcus mutans* is associated with galactose-deficient IgA in patients with IgA nephropathy: Misaki T., Naka S., Suzuki H., Lee M., Aoki R., Nagasawa Y., Matsuoka D., Ito S., Nomura R., Matsumoto-Nakano M., Suzuki Y., Nakano K.: PLoS One, 18(3), e0282367, 2023.
5: Development of rat caries-induced pulpitis model for vital pulp therapy. Huang H., Okamoto M., Watanabe M., Matsumoto S., Moriyama K., Komichi S., Ali M., Matayoshi S., Nomura R., Nakano K., Takahashi Y., Hayashi M.: Journal of Dental Research, 102(5), 574-582, 2023.
6: Simultaneous presence of *Campylobacter rectus* and *cnm*-positive *Streptococcus mutans* in the oral cavity is associated with renal dysfunction in IgA nephropathy patients: 5-year follow-up analysis.: Misaki T., Naka S., Nagasawa Y., Matsuoka D., Ito S., Nomura R., Matsumoto-Nakano M., Nakano K.: Nephron, 147(3-4), 134-143, 2023.
7: Distribution of periodontopathic bacterial species between saliva and tonsils.: Nomura R.*, Nagasawa Y., Misaki T., Ito S., Naka S., Okunaka M., Watabe M., Tsuzuki K., Matsumoto-Nakano M., Nakano K.: Odontology, 111(3), 719-727, 2023.

8: Developmental impairments of craniofacial bone and cartilage in transgenic mice expressing FGF10.: Yoshioka H., Kagawa K., Minamizaki T., Nakano M., Aubin Jane E., Kozai K., Tsuga K., Yoshiko Y.: Bone Reports, 18, 101692, 2023.
9: Inhibitory effect of adsorption of *Streptococcus mutans* onto scallop-derived hydroxyapatite.: Usuda M.[#], Kametani M.[#], Hamada M., Suehiro Y., Matayoshi S., Okawa R., Naka S., Matsumoto-Nakano M., Akitomo T., Mitsuhata C., Koumoto K., Kawauchi K., Nishikata T., Yagi M., Mizoguchi T., Fujikawa K., Taniguchi T., Nakano K., Nomura R.*: International Journal of Molecular Sciences, 24(14), 11371, 2023.
10: Structure, stability and binding properties of collagen-binding domains from *Streptococcus mutans*.: Nishi A., Matsui H., Hirata A., Mukaiyama A., Tanaka S., Yoshizawa T., Matsumura H., Nomura R., Nakano K., Takano K.: Chemistry, 5(3), 1911-1920, 2023.
11: *Porphyromonas gingivalis* infection in the oral cavity is associated with elevated galactose-deficient IgA1 and increased nephritis severity in IgA nephropathy.: Ito S., Misaki T., Nagasawa Y., Nomura R., Naka S., Fukunaga A., Matsuoka D., Matayoshi S., Matsumoto-Nakano M., Nakano K.: Clinical and Experimental Nephrology, in press.
12: Oral and rectal colonization of methicillin-resistant *Staphylococcus aureus* in long-term care facility residents and their association with clinical status.: Kusaka S., Haruta A., Kawada-Matsuo M., Le M., Yoshikawa M., Kajihara T., Yahara K., Hisatsune J., Nomura R., Tsuga K., Ohge H., Sugai M., Komatsuzawa H.: Microbiology and Immunology, in press.
13: A third supernumerary tooth occurring in the same region: A case report.: Akitomo T.*, Asao Y., Iwamoto Y., Kusaka S., Usuda M., Kametani M., Ando T., Sakamoto S., Mitsuhata C., Kajiya M., Kozai K., Nomura R.: Dentistry Journal, 11(2), 49, 2023.
14: Age estimation using post-mortem computed tomography and fetal dental radiographic findings in an early to mid-pregnancy fetus: A case report.: Oka H., Asao Y., Ohbayashi N., Nakao N., Ishiuchi N., Fukumoto W., Matsumoto Y., Kakimoto N., Nagao M., Kozai K.: Legal Medicine, 62, 102232, 2023.
15: Five-year follow-up of a child with non-syndromic oligodontia from before the primary dentition stage: A case report. Akitomo T.*, Kusaka S., Iwamoto Y., Usuda M., Kametani M., Asao Y., Nakano M., Tachikake M., Mitsuhata C., Nomura R.: Children, 10(4), 717, 2023.
16: Application of the salivary multi test in children with severe congenital neutropenia: A case report.: Iwamoto Y.*, Tatsukawa N., Irie Y., Kusaka S., Mitsuhata C., Nomura R.: Pediatric Dental Journal, 33(2), 152-158, 2023.
17: Eruption disturbance in first molar and primary second molar caused by multiple compound odontomas: A Case report.: AkitomoT.*, Iwamoto Y., Kaneki A., Nishimura T., Ogawa M., Usuda M., Kametani M., Kusaka S., Mitsuhata C., Nomura R. Journal of Clinical Pediatric Dentistry, in press.
18: Dens invaginatus of fourteen teeth in a pediatric patient.: Usuda M.[#], Akitomo T.[#*], Kametani M., Kusaka S., Mitsuhata C., Nomura R.: Pediatric Dental Journal, 33(3), 240-245, 2023.
19: Fusion of a tooth with a supernumerary tooth: A case report and literature review of 35 cases.: Akitomo T*., Kusaka S., Usuda M., Kametani M., Kaneki A., Nishimura T., Ogawa M., Mitsuhata C., Nomura R.: Children, 11(1), 6, 2023.

B) Review

1: Multiple-ion releasing bioactive surface pre-reacted glass-ionomer (S-PRG) filler: Innovative technology for dental treatment and care.: Imazato S., Nakatsuka T., Kitagawa H., Sasaki J., Yamaguchi S., Ito S., Takeuchi H., Nomura R., Nakano K.: Journal of Functional Biomaterials, 14(4), 236, 2023.

C) Publications

1: Japanese Journal of Clinical Dentistry for Children, 28(1), Clinical activities of Department of Pediatric Dentistry at Hiroshima University, Nakano M., Mitsuhata C., Nomura R. (co-authored): Tokyo Clinical Publication (Tokyo), 35-40, 2023.
2: Japanese Journal of Clinical Dentistry for Children, 28(6), Systemic diseases and periodontal disease in children, Mitsuhata C., Nomura R. (co-authored): Tokyo Clinical Publication (Tokyo), 52-59, 2023.
3: Pediatric Dentistry 6th Edition Immunology/Allergic diseases: Ryota Nomura (co-authored): Ishiyaku Publishing Co., Ltd. (Tokyo), 409-412, 2023.
4: Pediatric Dentistry, 3rd edition, Periodontal tissues, and periodontal diseases in children: Chieko Mitsuhata C., Nomura R. (co-authored): Nagasue Shoten (Kyoto), 161-177, 2023.

5: Well-being Guidelines for infants & Pre-schookers: Nomura R., Tachikake M., Iwamoto Y.: Japan National Council of Social Welfare (Tokyo), 171-174, 2023
6: DENTAL DIAMOND special issue: 27 Q&As in pediatric dentistry, answered according to the child's oral developmental stage: Mitsuhata C., Iwamoto Y., Asao Y. (co-authored): Dental Diamond Co. (Tokyo), 66-69, 2023.
7: DENTAL DIAMOND special issue: 27 Q&As in pediatric dentistry, answered according to the child's oral developmental stage: Nakano M., Nomura R. (co-authored): Dental Diamond Co. (Tokyo), 140-143, 2023.
8: Support Book for making regular oral health checkups a habit starting from childhood, Member benefits of SHOFU SHIKA CLUB Iwamoto Y., Tachikake M., Nomura R., 1-40, 2023.
9: Dental Life Design 2023 Children's systemic diseases that dental clinics should be aware of Part 1: Childhood type 1 diabetes: Iwamoto Y., Nomura R., J. MORITA CORP. (Osaka), web, 2023.
10: Dental Life Design 2023 Children's systemic diseases that dental clinics should take care of Part 2: Congenital heart disease: Iwamoto Y., Nomura R., J. MORITA CORP. (Osaka), web, 2023.
11: Dental Life Design 2023 Children's systemic diseases that should be taken care of at dental clinics Part 3: Childhood cancer survivors: Iwamoto Y., Nomura R., M J. MORITA CORP. (Osaka), web, 2023.

D) Other Publications

E) Presentations at Scientific Meetings

International conference

1: Three-year survey of dental caries conditions in Cambodian public primary school: Asao Y., Iwamoto Y., Nakano M., Akitomo T., Usuda M., Kametani M., Kusaka S., Tachikake M., Mitsuhata C., Nomura R.: Korean Academy of Pediatric Dentistry 2023 Conference (Seoul), 2023.
2: Interaction of essential oils in *Citrus unshiu* to cause inhibition of *Streptococcus mutans* bacterial growth: Okuda M., Ohata J., Matayoshi S., Nomura R., Nakano K.: Korean Academy of Pediatric Dentistry 2023 Conference (Seoul, Korea), 2023.
3: Contributions of *Streptococcus mutans* to dental caries and infective endocarditis: Suehiro Y., Matayoshi S., Otsugu M., Nomura R., Nakano K.: Korean Academy of Pediatric Dentistry 2023 Conference (Seoul, Korea), 2023.
4: IgA adherence to *Streptococcus mutans* Cnm for IgA nephropathy onset: Matsuoka D., Suehara K., Naka S., Misaki T., Nagasawa Y., Ito S., Nomura R., Nakano K.: 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
5: Effects of mouthwash on oral and systemic health of diabetic: Tojo F., Matayoshi S., Nomura R., Nakano K. 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
6: Periodontal disease in dogs correlates with FimA of *Porphyromonas gulae*: Suehiro Y., Matayoshi S., Yasuda J., Yasuda H., Gongora E., Matsumoto-Nakano M., Nomura R., Nakano K.: 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
7: Association of *Helicobacter pylori* in oral cavity and Parkinson’s disease: Kadota T., Matsuoka Y., Hamada M., Ogaya Y., Nomura R., Nakano N.: 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
8: Possible unique oral microbiome characteristics in children harboring *Helicobacter pylori* in the oral cavity: Ogaya Y., Kadota Y., Nomura R., Nakano K.: 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
9: Serum agglutinating ability of *Streptococcus mutans* killed by antibiotic: Suehiro Y., Matayoshi S., Otsugu M., Nomura R., Nakano K.: 101st General Session & Exhibition of the IADR (Bogotá, Colombia), 2023.
10: Effects of continuous dental support on periodontal status and oral health activities of hemophilic patients: Kametani M., Akitomo T., Niizato N., Usuda M., Kusaka S., Asao Y., Nakano M., Iwamoto Y., Tachikake M., Mitsuhata C., Nomura R.: 29th IAPD Congress (Maastricht, Netherland), 2023.
11: Inhibitory effects of S-PRG filler eluate on acid tolerance of *Streptococcus mutans*: Usuda M., Kametani M., Akitomo T., Nakano M., Suehiro Y., Matayoshi S., Mitsuhata C., Nakano K., Nomura R.: 29th IAPD Congress (Maastricht, Netherland), 2023.
12: Effect of professional mechanical tooth cleaning paste with high-performance silica on stain deposition: Akitomo T., Kusaka S., Usuda M., Kametani M., Hirose M., Takane S., Mitsuhata C.,

Nakano K., Nomura R.: 29th IAPD Congress (Maastricht, Netherland), 2023.

13: Pathogenicity of collagen-binding protein in *Streptococcus mutans*: Matsuoka D., Naka S., Goto K., Nomura R., Nakano K., Matsumoto-Nakano M.: 29th IAPD Congress (Maastricht, Netherland), 2023.

14: Cariology and systemic disorder collagen-binding properties of killed *Streptococcus mutans* strains: Suehiro Y., Matayoshi S., Otsugu M., Nomura R., Nakano K.: 29th IAPD Congress (Maastricht, Netherland), 2023.

15: Association of *Helicobacter pylori* in the oral cavity and dental caries with lifestyle-related disease: Kadota T., Hamada M., Nomura R., Nakano K.: The 70th ORCA congress (Egmond aan zee, Netherland), 2023.

16: Absorption effect of high-performance silica on food-derived dyes: Akitomo T., Kusaka S., Usuda M., Kametani M., Ogawa M., Kaneki A., Mitsuhata C. Nomura R.: 32nd Annual Conference of the Taiwan Academy of Pediatric Dentistry (Kaohsiung, Taiwan), 2023.

17: The changes on dental caries status of first molars among primary school children in Cambodia: Asao Y., Iwamoto Y., Nishimura T., Nakano M., Tachikake M., Mitsuhata C., Nomura R.: 32nd Annual Conference of the Taiwan Academy of Pediatric Dentistry (Kaohsiung, Taiwan), 2023.

18: Evaluation of killed *Streptococcus mutans* strains by fluorescence microscopy: Mikasa Y., Suehiro Y., Matayoshi S., Otsugu M., Nomura R., Nakano K.: 32nd Annual Conference of the Taiwan Academy of Pediatric Dentistry (Kaohsiung, Taiwan), 2023.

19: Possible mediation of tonsils to IgA nephropathy caused by *cnm*-positive *Streptococcus mutans*, a major pathogen of dental caries: Misaki T., Naka S., Nagasawa Y., Matsuoka D., Matayoshi S., Ito S., Nomura R., Matsumoto-Nakano M., Nakano K.: 17th International symposium on IgA nephropathy (IIgAN) (Tokyo), 2023.

20: Relation between *Porphyromonas gingivalis* po (I I g 6 . 9 (p o s)

Komatsuzawa H.: 56th Hiroshima University Dental Society General Meeting (Hiroshima) 2023.

5: Isolation and characterization of drug-resistant bacteria from nasal and oral cavity: Kawayanagi T., Kawada-Matsuo M., Nguyen-Tra Le Mi., Takeshita T., Hisatsune J., Kusaka S., Nomura R., Shiba H., Sugai M., Komatsuzawa H.: 96th Japanese Society of Bacteriology (Himeji), 2023.

6: Effects of killed treatment on collagen-binding properties of *Streptococcus mutans*: Suehiro Y., Matayoshi S., Otsugu M., Nomura R., Nakano K.: The 61st Congress of Japanese Society of Pediatric Dentistry (Nagasaki), 2023.

7: Molecular biological investigation of the binding of human IgA by collagen-binding protein Cnm: Matsuoka D., Naka S., Goto K., Nomura R., Nakano K., Matsumoto-Nakano M.: The 61st Congress of Japanese Society of Pediatric Dentistry (Nagasaki), 2023.

8: Relationship of collagen-binding protein-positive *Streptococcus mutans* strain distribution with dental caries incidence in children: Okuda M., Matayoshi S., Tojo F., Naka S., Matsumoto-Nakano M., Nomura R., Nakano K.: The 61st Congress of Japanese Society of Pediatric Dentistry (Nagasaki), 2023.

9: Effect of continuous oral health activities for hemophilic children in mixed dentition: Kametani M., Akitomo T., Niizato N., Usuda M., Kusaka S., Asao Y., Nakano M., Iwamoto Y., Tachikake M., Mitsuhata C., Nomura R.: The 61st Congress of Japanese Society of Pediatric Dentistry (Nagasaki), 2023.

10: A case of multiple teeth with dens invaginatus: Usuda M., Akitomo T., Kametani M., Kusaka S., Nakano M., Iwamoto Y., Niizato N., Mitsuhata C., Nomura R.: The 61st Congress of Japanese Society of Pediatric Dentistry (Nagasaki), 2023.

11: A case of crown malformation and enamel hypoplasia of succedaneous teeth derived from traumatic injuries to upper anterior primary teeth in 1-year-

21: Investigation of the antibacterial effect of citrus peel extract against *Streptococcus mutans*: Kusaka S., Akitomo T., Usuda M., Kametani M., Mitsuhata C., Nakano K., Nomura R.: The 42nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Yonago), 2023.
22: A case of malformation of successor permanent teeth derived from dental trauma to primary teeth n 1-year-old.: Tachikake M., Nakano M., Asao Y., Akitomo T., Hayashi F., Mitsuhata C., Nomura R.: The 42nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Yonago), 2023.
23: A case of four impacted supernumerary teeth found due to eruption disorder of a mandibular left second molar: Nakano M., Tachikake M., Kusaka S., Asao Y., Mitsuhata C., Nomura R.: The 42nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Yonago), 2023.
24: A case of long-term observation using denture for deciduous teeth after early loss of multiple deciduous teeth due to traumatic injuries: Asao Y., Tachikake M., Nishimura T., Nakano M., Iwamoto Y., Mitsuhata C., Nomura R.: The 42nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Yonago), 2023.
25: A case of extraction of several supernumerary teeth located in the premolar region that obstructed the eruption of permanent teeth during the replacement period.: Iwamoto Y., Akitomo T., Asao Y., Tachikake M., Mitsuhata C., Nomura R.: The 35th Annual Meeting and Academic conference of Japanese Society of Pediatric Oral and Maxillofacial Surgery (Tokyo), 2023.

F) Special lectures in academic meetings

1: Hiroshima Pediatric Dentistry Clinical Study Group Lecture (Hiroshima): “My pediatric dentistry clinical activities”: Nomura R., 2023.
2: Osaka University School of Dentistry Alumni Association Hiroshima/Yamaguchi Branch General Meeting (Hiroshima): “Pediatric dental treatment for general dentists”: Nomura R., 2023.
3: 66th Annual Meeting of the Japanese Society of Nephrology (Yokohama): Investigation of the influence of oral bacteria on the development of IgA nephropathy using rats and mice: Nomura R., 2023.
4: 63rd Hiroshima City School Health Conference Subcommittee (Hiroshima): “For children's dental health”: Nomura R., 2023.
5: 42nd Chugoku-Shikoku Regional Conference of the Japanese Pediatric Dental Association (Yonago): “Cardiovascular diseases caused by oral bacteria”: Nomura R., 2023.
6: Dental Health Federation WG “Dental Health Activities Conference to Support Children in Temporary Protection Facilities” (Hiroshima): Regarding the dental findings of children who visited Hiroshima University Hospital Pediatric Dentistry through temporary protection facilities”: Nomura R., 2023.
7: Special needs dental practitioner training (Hiroshima): “Advice from a pediatric dentist for special needs dental treatment”: Nomura R, 2023.
8: Hiroshima West Rotary Club International Community Service Committee Training Session: “Learning about International Community Service from Experienced Persons” Dental Support Activity in Cambodia: Iwamoto Y.: Hiroshima Shudo University Hiroshima Kyoso Junior & Senior High School (Hiroshima), 2023.5.13.
9: Ehime dental hygienists’ association 2023 4th professional training session of 5th lifelong training system: Oral function in children -Diagnosis and management of pediatric oral dysfunction-: Iwamoto Y.: (online), 2023.8.6.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grant-in-Aid for Scientific Research (C): Nomura R. (Principal Investigator), A new strategy for the prevention of *Helicobacter pylori* colonization in children focusing on dental caries and the oral environment. 21K10184. ¥700,000.
2: Grant-in-Aid for Scientific Research (B): Nomura R. (Co-Investigator), Investigation of new mechanisms for the control of systemic diseases induced by cariogenic bacteria. 21H03149. ¥1,900,000.
3: Fostering Joint International Research (B): Nomura R. (Co-Investigator), A new strategy to reduce systemic disease in low- and middle-income countries focusing on the collagen-binding ability of cariogenic bacteria. 21KK0160. \1,350,000.
4: Grant-in-Aid for Scientific Research (C): Nomura R. (Co-Investigator), Investigation of the colonization environment and methods to prevent the colonization of cariogenic bacteria, which are

highly associated with systemic diseases. 22K10268. ¥228,677.

5: Grant-in-Aid for Scientific Research (C): Nomura R. (Co-Investigator), Investigation of the association between *Helicobacter pylori* and periodontopathic bacterial colonization in the oral cavity of children. 22K10269. ¥400,000.

6: Grant-in-Aid for Scientific Research (C): Nomura R. (Co-Investigator), Elucidation of the mechanism of development of red complex species and IgA nephropathy and development of new treatment methods. 21K08242. \250,000.

7: Grant-in-Aid for Scientific Research (C): Nomura R. (Co-Investigator), Pathogenicity and function/structure relationships of *S. mutans* collagen-binding proteins solved by antibody-mimetic molecules. 22K10233. ¥100,000.

8: Grant-in-Aid for Scientific Research (C): Nomura R (Co-Investigator), Research on *Helicobacter pylori* infection in the oral cavity and Parkinson's disease. 23K09387. ¥200,000

9: Grant-in-Aid for Scientific Research (C): Mitsuhata C. (Principal Investigator), Effect of childhood stress on developmental brain formation. 21K10161. ¥600,000.

10: Grant-in-Aid for Scientific Research (C): Iwamoto Y. (Co-Investigator), Effect of childhood stress on developmental brain formation. 21K10161. ¥100,000.

11: Grant-in-Aid for Early-Career Scientists: Akitomo T. (Principal Investigator), Innovation of oral-systemic relationship research focusing on the collagen-binding ability of oral streptococci from pediatric. 23K16205. ¥1,200,000.

12: Academic instruction fee, Kyocera Corporation: Nomura R., ¥200,000

13: Young Member Research Presentation Encouragement Project, 29th International Pediatric Dentistry Congress: Usuda M., Inhibitory mechanisms of S-PRG filler eluate on Streptococcus mutans in the presence of sucrose. ¥54,000

14: Young Member Research Presentation Encouragement Project, 29th International Pediatric Dentistry Congress: Kametani M., Evaluation of the effect of continuous dental visits on periodontal condition and oral hygiene habits of hemophilic patients. ¥54,000

15: Futokukai Public Interest Incorporated Foundation Researcher Grant: Asao Y., Analysis of the impact of the new coronavirus infection on the oral cavity of children admitted to temporary protection

(1) Staff and Students

Lecturer: Mitsuhiro Yoshida * Chief: Mitsuhiro Yoshida (by-work)
Assistant Professor: Yoshitaka Shimizu, Mitsuru Doi, Akari Mukai (Mar.), Kana Oue
Resident: Tamayo Takahashi, Aya Oda, Hisanobu Kamio, Serika Imamura, Utaka Sasaki
(Feb.), Eiji Imado
Clinical Trainee: Masaki Yasusaka, Taiga Yoshinaka, Yuka Maetani

(2) Main Research Activities

1: Study on mechanisms of general anesthetic action
2: Development of a novel general anesthetic method applying enhancement of descending pain suppression system
3: Study on role of each neuron in an intravenous anesthetic agent-induced anesthetic factor
4: Study on a stage of delirium in general anesthesia
5: Study on involvement of dopamine neurons in awakening from general anesthesia
6: Study on antianxiety effects of sedative drugs
7: Study on respiratory sound monitor during dental treatment under sedation
8: Study on effects of nitrous oxide on cardiovascular system
9: Study on chronic pain
10: Study on medical emergency during dental treatments

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Analgesia-based Sedation for Oral Surgery in Patients With Chronic Respiratory Obstructive Disease: Takahashi T, Yoshida M, Ono S, Kanda T, Obayashi F, Kamio H, Oda A, Oue K, Mukai A, Doi M, Shimizu Y: J Craniofac Surg, 34(1): e70-e74, 2023.
2: N-methyl-d-aspartate receptors and glycinergic transmission, respectively, mediate muscle relaxation and immobility of pentobarbital in mice: Mukai A, Irifune M, Shimizu Y, Doi M, Kikuchi Y, Katayama S, Oue K, Yoshida M, Ago Y, Okada Y, Morioka N, Nakata Y, Sakai N: Neurosci Lett, 802:137175, 2023.

70(3.4): 430-435, 2023.

8: Swallowing sound index analysis using electronic stethoscope and artificial intelligence for patients with Parkinson's disease: Nakamori M, Shimizu Y, Takahashi T, Toko M, Yamada H, Hayashi Y, Ushio K, Yoshikawa K, Hiraoka A, Yoshikawa M, Nagasaki T, Mikami Y, Maruyama H: J Neurol Sci, Nov 15; 454: 120831, 2023.

9: Swallowing sound evaluation using an electronic stethoscope and artificial intelligence analysis for patients with amyotrophic lateral sclerosis: Nakamori M, Ishikawa R, Watanabe T, Toko M, Naito H, Takahashi T, Simizu Y: Front Neurol, Aug 3; 14: 1212024, 2023.

10: Impact of neck percutaneous interferential current sensory stimulation on swallowing function in patients with Parkinson's disease: A single-arm, open-label study protocol: Nakamori M, Toko M, Yamada H, Hayashi Y, Yoshikawa K, Yoshikawa M, Nagasaki T, Hiraoka A, Shimizu Y, Mikami Y, Maruyama H: Contemp Clin Trials Commun, Jun 10; 33: 101158, 2023.

11: Features and mechanisms of propofol-induced protein kinase C (PKC) translocation and activation in living cells: Noguchi S, Kajimoto T, Kumamoto T, Shingai M, Narasaki S, Urabe T, Imamura S, Harada K, Hide I, Tanaka S, Yanase Y, Nakamura S, Tsutsumi Y, Sakai N: Front Pharmacol, Nov 7: 14: 1284586, 2023.

12: Severe perioperative lactic acidosis in a pediatric patient with glycogen storage disease type Ia: a case report: Takahashi T, Oue K, Imado E, Doi M, Shimizu Y, Yoshida M: JA Clinical Reports, 9:91, 2023.

13: Oral surgery under general anesthesia in a patient with catecholaminergic polymorphic ventricular tachycardia: A case report: Sachiko Yamasaki, Yukio Yoshioka, Kana Oue, Koichi Koizumi, Souichi Yanamoto: Oral Science International; 1–5, 2023.

B) Review

1: Special Article Chronic Orofacial Pain Cognitive Behavioral Therapy: Doi M: Pain clinic, 44(4): 362-368, 2023.

C) Publications

1: Respiratory and airway, skin and skeletal muscle: Anesthesiology Troubleshooting A to Z 2nd ed. (Takasaki M, Kawamoto M, Shirakami G, Matsumoto M, Hirota K): Shimizu Y: Bunkodo Co. (Tokyo), 366, 520, 2022.

2: Treatment of Orofacial Pain (General Therapy) 7. Cognitive Behavioral Therapy: Guidebook for Diagnosis and Treatment of Orofacial Pain 3rd ed. (The Japanese Association for Orofacial Pain): Doi M: Ishiyaku Publishers Inc. (Tokyo), 181-185, 2023.

D) Other Publications

E) Presentations at Scientific Meetings

1: A case of wisdom tooth extraction for an intellectually disability patient with CPVT: Yoshioka Y, Yamasaki S, Oue K, Ito N, Yanamoto S: The 32nd annual meeting of Japanese society of dentistry for medically compromised patient (Karuizawa), 2023.

2: A case of general anesthesia management of an intellectually disability patient with CPVT: Takahashi T, Oue K,Imado E, Imamura S, Kamio H, Oda A, Doi M, Shimizu Y, Yoshida M: The 51st Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

3: A case study of anesthetic management for a patient with autism spectrum disorder and dental phobia with Fontan circulation: Takahashi T, Oue K, Imado E, Oda A, Mukai A, Oda Y, Shimizu Y, Okada Y, Yoshida M: The 40th Annual Meeting of the Japanese Society for Disability and Oral Health (Sapporo), 2023.

4: A Study of the Impact of the Spread of COVID-19 Infection on Patients Receiving Stress-free dental clinic at the Hiroshima University Hospital -Comparison of the number of COVID-19 infected patients and the number of patients consulted-: Oda A, Takahashi T, Imado E, Imamura S, Kamio H,Oue K, Doi M, Shimizu Y, Yoshida M: The 107th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2023.

5: A Study of the Impact of the Spread of COVID-19 Infection on Patients Receiving Stress-free dental

clinic at the Hiroshima University Hospital -age, anesthesia management category, anesthesia management method, assesment of general condition, use of local anesthesia-: Takahashi T, Oda A, Imado E, Imamura S, Kamio H,Oue K, Doi M, Shimizu Y, Yoshida M: The 107th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2023.

6: Periodontal infection in diet-induced obesity causes cognitive impairment associated with microglial activation: Kana Oue, Yusuke Morioka, Eiji Imado, Testuya Tamura, Yosuke Yamawaki, Kazuhisa Ouhara, Mitsuhiro Yoshida, Takashi Kanematsu, Yukio Ago: IAGG Asia/Oceania Regional Congress (Yokohama), 2023.

7: Efficacy and safety of remimazolam for sedation undergoing dental procedure: Oue K, Oda A, Takahashi T, Kamio H, Sasaki U, Imamura S, Imado E, Mukai A, Doi M, Shimizu Y, Yoshida M: The 51st Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

8: Electroencephalogram of intravenous sedation during dental procedures with remimazolam: Oda A, Oue K, Takahashi T, Kamio H, Imamura S, Sasaki U, Imado E, Mukai A, Doi M, Shimizu Y, Yoshida M: The 51st Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

9: Canacoustic monitoring with artificial intelligence aspiration risk during monitored anaesthesia care of patients with obesity: Shimizu Y, Saeki N, Doi M, Oue K, Oue K, Yoshida M, Takahashi T, Oda, Ohsimo S, Sadamori T, Shime N: The 6th Annual Meeting of Japanese Airway Management Society (Oomiya), 2023.

10: Canacoustic monitoring with artificial intelligence aspiration risk during dental sedation: Shimizu Y, Saeki N, Doi M, Oue K, Oue K, Takahashi T, Oda, Sasaki U, Imamura S, Imado E, Kamio H, Yoshida M: The 51th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

11: A case of a patient with Klippel-Trenaunay-Weber syndrome who had difficulty in controlling perioperative hemostasis: Imamura S, Takahashi T, Imado E, Kamio H, Oda A, Oue K, Doi M, Shimizu Y, Yoshida M: The 37th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Hiroshima), 2023.

12: A case of intravevous sedation in a post-Fontan operation patient with autism: Imamura S, Oue K, Oda A, Kamio H, Imado E, Sasaki U, Takahashi T,Mukai A, Doi M, Shimizu Y, Yoshida M: The 51st Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

13: Oral Hygiene Management of Patients with Somatic Symptoms Disorder and Delusional Disorder: Yano K, Doi M: The 38th Annual Meeting of the Japanese Society of Dental Psychosomatic Medicine (Koriyama), 2023.

14: An airway management of the patient with Sturge-Weber syndrome in sagital split ramus osteotomy surgery under general anesthesia: Oda A, Yoshida M, Imado E, Takahashi T, Oue K, Mukai A, Shimizu Y, Oda Y, Okada Y: The 40th Annual Meeting of the Japanese Society for Disability and Oral Health (Sapporo), 2023.

15: A case of a patient with markedly elevated creatinine kinase levels on preoperative blood tests: Imado E, Yoshida M, Imamura S, Takahashi T, Kamio H, Oda A, Oue K, Doi M, Shimizu Y: The 37th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Hiroshima), 2023.

16: Role of HDAC inhibition in allodynia induced by prenatal valproic acid exposure: Imado E, Nakatsuka T, Ago Y, Yoshida M: The 51st Annual Meeting of the Japanese Dental Society of Anesthesiology (Nagasaki), 2023.

17: Prenatal exposure to histone deacetylase inhibitors causes mechanical allodynia associated with spinal microglial activation: Imado E, Ono A, Ago Y, Yoshida M: The 40th Annual Meeting of the Japanese Society for Disability and Oral Health (Sapporo), 2023.

18: Role of the VPAC2 receptor overactivation implicated in schizophrenia susceptibility: development of neuron-specific human VPAC2 receptor overexpressing mice: Ono A, Imado E, Ago Y: The 40th Annual Meeting of the Japanese Society for Disability and Oral Health (Sapporo), 2023.

19: In utero exposure to the antiepileptic drug valproic acid induces a long-lasting hyperalgesia and allodynia associated with central sensitization: Tahara T, Imado E, Uta D, Takuma K, Kume T, Kotake Y, Asano S, Ago Y: Forum 2023 Pharmaceutical Health Sciences Environmental Toxicology (Hiroshima), 2023.

20: In utero exposure to valproic acid causes central sensitization and increased pain sensitivity: Ago Y, Tahara T, Imado E, Uta D, Takuma K, Kume T, Kotake Y, Asano S: The 44th Annual Scientific Meeting of the Japanese Society of Clinical Pharmacology and Therapeutics (Kobe), 2023.

F) Special lectures in academic meetings

1: Treatment of Orofacial Pain III - Focusing on Emotion: Doi M: Ministry of Health, Labour and