

**Division of Pediatric Dentistry**  
**Graduate School of Dentistry**  
**Health Sciences University of Hokkaido**

**Outline**

The mission of the pediatric dentistry is to promote healthy oral environment of children and patients with special needs, through clinical care and education. Besides patient care and education, research is an important component of the Division of Pediatric Dentistry. Graduate student in the pediatric dentistry program must complete an approved research project leading to a paper of publishable quality during the student period. Our division research fields are as follows.

**Faculty members**

Professor and Director: Masato Saitoh D.D.S., Ph.D.

Associate professor: Mina Hirose D.D.S., Ph.D.

Assistant professor/full-time lecturer: Yoshihito Kurashige D.D.S., Ph.D., Yukie Murata D.D.S., Ph.D.

Assistant professor/research associate: Maiko Otomo D.D.S., Ph.D., Sayaka Sakakibara D.D.S. Ph.D., Yusuke Fujita D.D.S. Ph.D., Erika Minowa D.D.S., Ph.D.

Cinical instructor: Misato Kobashi D.D.S., Syuji Kawano D.D.S., Mihoko Takafuji D.D.S., Ph.D.

**Postgraduate students**

Yunosuke Okada D.D.S., Dembereldorj Bolortsetseg D.D.S, Taisei Kato D.D.S, Akihiro Ichimura D.D.S.



**Main research in progress**

- 1) Characterization of Malassez epithelial rest cultured cells
- 2) Effect of mineralization by enamel matrix protein on early caries lesion
- 3) Characterization of tooth formation and mineralization using a tooth germ cultivation system.
- 4) Effects of phenytoin on the calcium responses in human gingival fibroblast
- 5) Development of novel Mineral Trioxide Aggregate for pulp therapy of primary and immature permanent teeth

## Current publications

- 1) Syed Taufiqul Islam, Yoshihito Kurashige, Erika Minowa, Koki Yoshida, Durga Paudel, Osamu Uehara, Yunosuke Okada, Dembereldorj Bolortsetseg, Sayaka Sakakibara, Yoshihiro Abiko, Masato Saitoh. Analysis of the cells isolated from epithelial cell rests of Malassez through single-cell limiting dilution. *Scientific reports*, 12(1) 2022.
- 2) Mashima I, Theodora CF, Djais AA, Kunihiro T, Kawamura Y, Otomo M, Saitoh M, Tamai R, Kiyoura Y. *Veillonella nakazawae* sp. nov., an anaerobic Gram-negative coccus isolated from the oral cavity of Japanese children. *Int J Syst Evol Microbiol*. Jan;71(1), 2021.
- 3) Koki Yoshida, Osamu Uehara, Yoshihito Kurashige, Durga Paudel, Aya Onishi, Puja Neopane, Daichi Hiraki, Tetsuro Morikawa, Fumiya Harada, Rie Takai, Jun Sato, Masato Saitoh & Yoshihiro Abiko. Direct reprogramming of epithelial cell rests of malassez into mesenchymal-like cells by epigenetic agents. *Scientific report*. 11, 1852 2021.
- 4) Aung MS, Urushibara N, Kawaguchiya M, Hirose M, Ike M, Ito M, Kobayashi N. Distribution of Virulence Factors and Resistance Determinants in Three Genotypes of *Staphylococcus argenteus* Clinical Isolates in Japan. *Pathogens* 10: 163-179, 2021.
- 5) Aung MS, Urushibara N, Kawaguchiya M, Hirose M, Ito M, Habaderac S, Kobayashi N. Clonal diversity of methicillin-resistant *Staphylococcus aureus* (MRSA) from bloodstream infections in northern Japan: Identification of spermidine N-acetyltransferase gene (speG) in staphylococcal cassette chromosomes (SCCs) associated with type II and IV SCCmec. *Journal of Global Antimicrobial Resist* 24: 207–214,2021.
- 6) Minowa E, Kurashige Y, Islam ST, Yoshida K, Sakakibara S, Okada Y, Fujita Y, Bolortsetseg D, Murai Y, Abiko Y, Saitoh M. Increased integrity of cell-cell junctions accompanied by increased expression of claudin 4 in keratinocytes stimulated with vitamin D3. *Med Mol Morphol*. 2021 Dec;54(4):346-355, 2021.
- 7) Hirose M, Aung MS, Fukuda A, Yahata S, Fujita Y, Saitoh M, Hirose Y, Urushibara N, Kobayashi N. Antimicrobial Resistance and Molecular Epidemiological Characteristics of Methicillin-Resistant and Susceptible Staphylococcal Isolates from Oral Cavity of Dental Patients and Staff in Northern Japan. *Antibiotics* 10: 1316-1330, 2021.
- 8) Masato Saitoh, Seikou Shintani. Molar incisor hypomineralization: A review and prevalence in Japan. *Japanese Dental Science Review*57:71-77, 2021
- 9) Kohei Mito, Toshiya Sato, Rina Ishikawa, Ratna Ramadhani, Yunosuke Okada, Yuri Hirohata, Tetsuro Saito, Hisayoshi Ishii. Age-related decrease of cholinergic parasympathetic reflex vasodilation in the rat masseter muscle. *Microvascular Research* 138:104214, 2021
- 10) Aung MS, Matsuda A, Urushibara N, Kawaguchiya M, Ohashi N, Matsuda N, Nakamura M, Ito M, Habadera S, Matsumoto A, Hirose M, Kobayashi N. Clonal diversity of *Clostridium perfringens* human clinical isolates with various toxin gene profiles based on multilocus sequence typing and alpha-toxin (PLC) typing. *Anaerobe* 72: 102473, 2021.
- 11) Yunosuke Okada, Hanako Ohke, Hiroyo Yoshimoto, Misato Kobashi, Masato Saitoh, Makoto Terumitsu. Nasogastric Tube Knotted Around a Nasal Endotracheal Tube in the Nasopharynx: Possible Cause. *Anesth Prog*. 1;68(2):90-93, 2021.
- 12) Kawanishi K, Okahashi T, Aita H, Kan Y, Yamazaki M, Asahiro K, Oyama S, Ueki T, Sugihara K, Chiba R, Yamagata M, Matsubara K, Murata Y, Shirai K, Kono M, Toyoshita Y, akakura Y, Nagasawa T, Koshino H. Usefulness of the newly developed artificial denture plaque for practical denture care training. *Clinical and Experimental Dental Research*. *Clin Exp Dent Res* 6(2): 254–265, 2020.