

Dent J Health Sci Univ Hokkaido

ORIGINAL REPORT

- 1 **Study of the spontaneous non-pigmented variant of *Porphyromonas gingivalis* in biofilm formation**
Arihide KAMAGUCHI, Masaaki OKAMOTO, Eiji IGARASHI, Mari FUJITA, Hiroshi MIYAKAWA,
and Futoshi NAKAZAWA (85)
- 9 **mRNA expression of proteoglycans in temporomandibular joint disc of growing rats**
Naohisa KOHDA, Naoko TORIYA, Toshiya ARAKAWA, Taishin TAKUMA
and Itaru MIZOGUCHI (93)

ABSTRACT OF DOCTORAL DISSERTATION

- 19 **Establishment of orthognathic surgery simulation by using multimodal 3D (3-dimensional)
image-fusion techniques.**
Jun UECHI (103)
- 23 **Residual stress at the adhesion interfaces and deformation of metal frame induced to polymerization
shrinkage and thermal contraction of high polymer**
Ken KAKINO (107)

DENTAL INFORMATION

- 25 **Recent topics** (109)