Outline
Besides soft tissue such as dental pulp, periodontal ligament, and gum, the object of dental treatment includes enamel, dentin, cementum, and teeth surrounding alveolar bone. These tissues are mineralized under the cellular control, so that the process is called “biomineralization”. Thus, the understanding of biomineralization would be a key to make progress in dental treatment including tissue engineering. In the Division of Histology, we are concerned to elucidate the process of biomineralization and cellular involvements during development, remodeling, and regeneration of hard tissues (mainly in dentin and alveolar bone), using the morphological approach such as fine structural examination and immunohistochemistry with a light and an electron microscopy. Our ongoing research is shown below.

Faculty members
Professor; Kazuharu IRIE, D.D.S., Ph.D.
Assistant professor/full-time lecturer; Nobuko OBARA, Ph.D.
Assistant professor/research associate; Hiroaki TAKEBE, D.D.S., Ph.D.

Postgraduate students
Md Riasat HASAN; B.D.S., M.P.H. (Clinical Cariology and Endodontology)

Comments from the postgraduate student
My name is Md Riasat Hasan. I am from Bangladesh. My field of interest is Oral Histology. My research is based on Regeneration of periodontal ligament cells after immersing the tooth in different storage media. I am excited about my research work.
Main research in progress
Hard tissue biology including
1) The role of osteocyte in bone remodeling
2) The role of non-collagenous proteins in dentin and bone mineralization
3) Regeneration of alveolar bone (periodontal tissue) during dental implant and dental transplant
4) The molecular basis of tooth morphogenesis

Current publications