

硬組織細胞生物学

Introductory Cell Biology of Mineralized Tissues

担当教員 Instructors

教授:

高垣裕子

竹内良平(特任)

准教授:

講師:

助教**:

谷口紀江

Professor:

Yuko Mikuni-Takagaki

Ryouhei Takeuchi

Associate Professor:

Lecturer:

Assistant Professor:

Motoe Taniguchi

授業区分/単位数 Course category/Credits

授業区分/単位数

コア科目

4単位

Course category/Credits

Core

4 credits

開講学期/週当時間(コマ)数 Semester

前期/週4時間(2コマ)

First semester/4 lecture hours per week (2 classes)

This course meets once a week (4-hour session). There will be a total of about 15 sessions.

目標 Objectives

硬組織の細胞は、細胞一般としての性質の他に硬組織を形成・維持するための特殊かつ重要な役割を担っている。前期には細胞生物学一般をまず概説し、その後特殊性を各硬組織について詳細に、疾患や高齢期における硬組織の維持との関連において習得する。

Cells in mineralized tissues have distinct roles in the formation and maintenance of tissues such as bone and teeth, which are composed of firm extracellular substances. This course introduces the unique characteristics of the cells in mineralized tissues in terms of cell biology in health, disease and senescence.

講義内容 Contents of Course

細胞の構造と機能、例えば高分子、代謝、増殖、遺伝子およびタンパク質の発現とその調節、細胞分化、細胞骨格の構築、情報伝達について、一般の細胞と硬組織の細胞の特徴を、特に疾患と加齢における変化に留意して学ぶ。

Learns the ultrastructure and functions of cells, including macromolecules, cell metabolism, cell division, gene and protein expression and control of gene expression, differentiation, cytoskeletal organization, and cell communication of cells in general as well as the cells in mineralized tissues.

参考書 Recommended reference books and/or readings

Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism, Seventh Edition, by Clifford Rosen, M.D., Ed. American Society for Bone and Mineral Research, 2008(翻訳書なし).

Essential Cell Biology, Third Edition, by Alberts, Bray, Hopkin, Johnson, Lewis, Raff, Roberts, and Walter. Garland Science, New York, 2010(翻訳書あり).

成績評価の方法 Grading System

準備状況と議論への参加, 25%; レポート, 50%; 口頭試問, 25%. 1/3以上の欠席は認めない。

Class preparedness and participation, 25%; Written assignments, 50%; Student-teacher conferences, 25%. A student will receive a course grade of zero if he or she is absent from 30% of the classes or more.

履修に当たっての留意点 Course requirement

特になし

None