

細胞生物学実習II 硬組織細胞

Cell Biology Lab II Mineralized Tissue Cells

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 units

開講学期/週当時間(コマ)数 Semester

後期/週8時間(4コマ)

Second semester/8 hours per week (4 classes)

This course meets for four 2-hour sessions per week. There are a total of 60 sessions.

目標 Objectives

各硬組織における細胞生物学的特殊性を実験的に解析する。疾患や高齢期における硬組織の維持との関連において個別の細胞の特徴を習得する。

To acquire lab skills for cell biology in mineralized tissue cells. Examples of particular cells in disease states and senescence will be studied.

講義内容 Contents of Course

硬組織を構成する細胞の単離・培養法, 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, 硬組織に特有の実験的手法を学ぶ。

In addition to lab skills to study ultrastructure and functions of soft-tissue cells, specialized skills are required for studies of mineralized tissue cells. Skills to be learned will include how to demineralize tissues prior to isolation of intact cells such as osteocytes and odontoblasts and how to isolate RNA, DNA and proteins from mineralized tissue cells. Cellular mechanisms for mineralization in health, disease states and senescence will be studied.

参考書 Recommended reference books and/or readings

Biology Laboratory Manual. Eighth Edition, by Vodopich and Moore. WCB McGraw-Hill Companies, Boston, 2008.

Molecular Cloning: A Laboratory Manual, Fourth Edition (3-Volume Set), by Green and Sambrook. CSHL Press, Woodbury, 2012

他に論文や引用文献を実習時に提供する。

Additional papers and references will be supplied in the lab.

成績評価の方法 Grading System

準備状況と実践, 25%; レポート, 50%; 口頭試問, 25%. 4回以上の欠席は認めない。

Class preparedness and participation, 25%; Written assignments, 50%; Student-teacher conferences, 25%. Students will receive a course grade of zero if they miss 4 labs.

履修に当たっての留意点 Course requirement

特になし

None