

## Cell Signaling System

2 units (selection)

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**Target** This class introduces signaling system which regulates cell functions.

**Outline** Structure of signaling molecule and cell signaling system are introduced.

**Style** Lecture

**Keyword** *growth/differentiation factor, receptor, signal transduction*

**Fundamental Lecture** “Cell Biology”(0.5), “Biochemistry 2”(0.3), “Advanced Biochemistry”(0.3)

**Relational Lecture** “Life Science”(0.2)

**Requirement** Students are required to have a good understanding of undergraduate-level cell biology and biochemistry.

**Goal**

1. Understanding of regulatory mechanism of biological activity of signaling molecule
2. Understanding of function of receptor and intracellular signaling system

**Schedule**

1. Introduction of cell signaling system
2. Cell structure and function of organella
3. Post-translational modification of signaling molecule
4. Structure of processing enzyme
5. Function and regulation of processing enzyme
6. Secretion of signaling molecule
7. Structure and function of receptor
8. Protein kinase and protein phosphatase
9. Transcriptional regulation
10. Regulation of cell function by AAA protein (1)
11. Regulation of cell function by AAA protein (2)
12. Recent research on signaling molecule (1)
13. Recent research on signaling molecule (2)
14. Significance of signaling molecule as target for drug design (1)
15. Significance of signaling molecule as target for drug design (2)
16. Preparation of report

**Evaluation Criteria** Evaluation by report

**Textbook** To be introduced in the class

**Reference** To be introduced in the class

**Contents** <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216660>

**Contact**

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**Note** When you take this class, it is necessary to do preparation for 2h and review for 2h every 2h class for your understanding and taking credit.