

## Cell Biotechnology

2 units (selection)

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**Target** This class aims to expand the knowledge on cell biotechnology and improve the skill of debate through the debate dealing with cell biotechnology and its applications.

**Outline** Debates among students dealing with the latest reports on technology and application concerned with production of useful materials, medical assay, and medical treatment using various cells are held in order to deepen the knowledge on cell biotechnology and its peripheral field. Training on skills of debate and communication is simultaneously carried out.

**Style** Lecture

**Keyword** cell, biotechnology, debate

**Relational Lecture** “Advanced Biochemistry”(0.8), “Molecular Biotechnology”(0.8), “Technology for Bioreaction”(0.8), “Biological macromolecular chemistry”(0.5), “Advanced enzyme engineering”(0.5)

**Requirement** Students are required to have a good understanding of undergraduate-level of cell technology and related subjects

**Goal**

1. To understand the latest cell biotechnology and its application examples
2. To gain the ability of debate on technologies concerned in cell biotechnology

**Schedule**

1. Cell biotechnology on production of useful materials 1(Production of antibodies)
2. Cell biotechnology on production of useful materials 2(Production of enzymes)
3. Cell biotechnology on production of useful materials 3(Production of lymphokines)
4. Cell biotechnology on production of useful materials 4(Production of cytokines)
5. Cell biotechnology on production of useful materials 5(Production of bioactive proteins)
6. Cell biotechnology on medical or industrial assay 1(Measurement of cytotoxicity)
7. Cell biotechnology on medical or industrial assay 2(Analysis of signal transduction pathways)

8. Cell biotechnology on medical or industrial assay 3(Analysis of transcriptosome)
9. Cell biotechnology on medical or industrial assay 4(Diagnostics of genome disorder/SNPs)
10. Cell biotechnology on medical or industrial assay 5(Diagnostics of intracellular bacteria/viruses)
11. Cell biotechnology on medical treatment 1(Artificial skin)
12. Cell biotechnology on medical treatment 2(Immune cell therapy)
13. Cell biotechnology on medical treatment 3(Cell transplant/Organ transplant)
14. Cell biotechnology on medical treatment 4(Techniques for clone development)
15. Cell biotechnology on medical treatment 5(ES cells/iPS cells)

**Evaluation Criteria** Assignments count 50%, Presentation count 50%

**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=216661>

**Student** Able to be taken by student of other department

**Contact**

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MAIL (Office Hour: Monday 16:20-17:50)

**Note** Preparation and review of two hours each are required for understanding of every class with two hours and taking the credits.