Technology for Bioreaction

2 units (selection)

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Target〉 Lectures for science and technology to use biological reactions. Especially, focusing on morphological formation of organisms, we will talk about how genomic infomation is decoded to bilud up body by bottom-up strategies.

Outline〉 We present lelcutures about techynology for application of biological reactions, especially meidical and engineering applications. We will focuse on 1) genome projects, 2) application of genome information, 3) application of PCR to genetic analyses, 4) in situ hybridization for analysis of gene expression pattern, 5) application of in situ hybridization, 6) transgenic animals, 7) applications of transgenic animals, 8) knock-out animals, 9) applications of knock-out animals, 10) medical applications of knock-out animals

Style〉 Lecture in combination with Portfolio

Keyword〉 ***genome science, RNA engineering, technology for developmental biology***

Relational Lecture〉 "**Molecular Biotechnology**"(0.5), "**Molecular Biotechnology**"(0.5), "**Advanced Biochemistry**"(0.5)

Requirement〉 N/A

Notice〉 N/A

Goal〉

1. To understand structures of genomes and its analitical methods
2. To understand analytical methods for gene expression
3. To understand morpholigical genes and its structures
4. To understand mechanisms of developmenal process

Schedule〉

1. Evolution
2. Genomic structures and evolution
3. Transcription factors and gene expression
4. Cis-regulaory elements and regulation of gene expression
5. Gene expression patterns
6. Functions of RNAs
7. RNA interference
8. reports for evaluation
9. Homeobox genes
10. Genes for signalling pathways
11. Genes for cell-cell adhesion factors
12. Developmental mechanisms of C. elegance
13. Developmental mechanisms of insects
14. Developmental mechanisms of invertebrate
15. Developmental mechanisms of vertebrate
16. report for evaluation

Evaluation Criteria〉 Evaluate two reports (50% each).

Textbook〉 N/A

Reference〉 From DNA to Diversity

Contents〉 http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216737

Student〉 all students

Contact〉

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