Plant Chemistry

Syllabus Number 5I265

Special Subjects
Elective 2 credit

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1. Course Description

Biological roles, biosynthesis and its regulatory mechanisms, and perception and signal transduction of plant hormones will be studied.

2. Course Objectives

It has been indicated that plant hormones are involved in a variety of growth and physiological phenomena throughout the life cycle. The aim of this course is to understand biological functions, biosynthesis, and signal transduction pathways of plant hormones.

3. Grading Policy

Final grade will be calculated according to quizzes in each lecture (30%) and the final examination (70%). To pass, students must earn at least 60 points out of 100.

4. Textbook and Reference

Reference

T. Asami and T Kakimoto "Atarashii syokubutsu horumonn no kagaku 3rd edition (in Japanese)" Kodansha, ISBN:978-4061534520

M. Mizutani et al. "Kiso kara manabu syokubutsu taisha seikagaku (in Japanese)" Yodosha, ISBN:978-4758120906

5. Requirements(Assignments)

Students have to prepare each lecture by reading the handout posted on LMS and summarizing the content of next lecture in a notebook. This preparation will take one hour.
There will be homework each week. Students should review the questions they did not understand in their homework. Quizzes in each lecture will contain similar questions. This review will take two hours.

6. Note

Students should review the contents of "Organic chemistry". Handout will be posted on LMS. Part of quizzes will be performed using mobile-MARS.

7. Schedule

[1] Plant hormones and secondary metabolites
[2] Biosynthesis of terpenoid
[3] Biosynthesis of fatty acid and polyketide
[4] Biosynthesis of phenolic compounds
[5] Physiological function, biosynthesis and perception of gibberellins
[6] Physiological function, biosynthesis and perception of auxin
[7] Physiological function, biosynthesis and perception of cytokinin
[8] Physiological function, biosynthesis and perception of abscisic acid
[9] Physiological function, biosynthesis and perception of ethylene
[10] Physiological function, biosynthesis and perception of brassinosteroid
[11] Physiological function, biosynthesis and perception of strigolactone
[12] Physiological function, biosynthesis and perception of jasmonate
[13] Physiological function, biosynthesis and perception of salicylic acid
[14] Florigen and peptide hormone
[15] Final examination and commentary