

Intracellular signaling of plants

1. Lecturer: Dzhameyev Vadym, a senior lecturer of the department of plant and microorganism physiology and biochemistry.
2. Status: optional for bachelors.
3. Course, semester: 4th academic year, 7th semester.
4. Number of credits – 1,5, general academic hours – 76, lectures – 24; self-study – 36.
5. Preliminary requirements: basics of Plant Physiology and Biochemistry, Microbiology, Biochemistry, Genetics
6. Description of the course: the course "Intracellular signaling of plants" is integrative in nature. Within the course outlines current thinking regarding ways of perceiving and decoding cell external signals. It's presented data on the structure and functioning of the main signaling components. The essence of the signal transmit at the molecular level is highlighted and the different types of signaling mechanisms are described. Specialist genuinely mastered this course is to acquire skills orientation in modern concepts on cell reception mechanisms and intracellular signal transmission, and ability to extrapolate the unknown mechanisms of functioning.

Sections: 1) The phenomenon of signal transmission in cell. 2) External signal reception of cell. 3) Signal transfer inside of cell.

Knowledge and skills:

- knowledge of the nature of the reception and transmission of intracellular signals;
- knowledge of the structure, methods of activation and operation of signaling intermediaries;
- knowledge of examples of reconstructed signaling mechanisms;
- the ability to predict the peculiarities of signaling mechanisms in conditions of presence of mutations in certain signal components and considering this to plan experiments.

7. Course organization: lectures, seminars. Forms of control: tests, exam.
8. Language: Ukrainian.
9. Educational and methodological support: program, schedule of classes, educational and multimedia presentations, methodical complex, guidelines for practice.

Studentbooks:

1. *Джамеев В. Ю.* Механізми рецепції та внутрішньоклітинного сигналіngu у рослин: навчальний посібник / В. Ю. Джамеев. — Х. : ХНУ імені В.Н. Каразіна, 2016. — 208 с.
2. *Джамеев В. Ю.* Внутриклеточный сигналинг у растений: учебное пособие / В. Ю. Джамеев. — Х. : АССА, 2015. — 224 с.
3. *Колупаев Ю. Е.* Формирование адаптивных реакций растений на действие абиотических стрессоров / Ю. Е. Колупаев, Ю. В. Карпец. — К.: Основа, 2010. — 352 с.
4. *Тарчевский И. А.* Сигнальные системы клеток растений. — М.: Наука, 2002. — 294 с.
5. *Кулаева О. Н.* Восприятие и преобразование гормонального сигнала у растений. К материалам международного симпозиума // Физиология растений. — 1995. — Т. 42, №5. — С. 661-671.
6. *Зинченко В. П.* Внутриклеточная сигнализация / В. П. Зинченко, Л. П. Долгачева. — Пушино: Электронное издательство «Аналитическая микроскопия». — 2003.
7. *Крутецкая З. И.* Механизмы внутриклеточной сигнализации: монография / З. И. Крутецкая, О. Е. Лебедев, Л. С. Курилова. — СПб. : Изд-во СПб. ун-та, 2003. — 208 с.