Metody analizy ruchu komórek

Proponowane daty, godziny oraz miejsce realizacji zajęć:
semestr zimowy, 4 spotkania po 5 godzin, poniedziałki 15:00–18:45,
daty - 9.12.2025; 16.12.2025, 11.01.2026 18.01.2026
sale Zakładu Molekularnych Mechanizmów Komórkowych UMed (144, 150. 48, 50)

Forma zajęć:
stacjonarna

Profil zajęć:
molekularne

Dyscyplina naukowa:
nauki medyczne

Imię i nazwisko koordynatora zajęć:
dr hab. Katarzyna Sobierajska, prof. UMed

Jednostka organizacyjna odpowiedzialna za przeprowadzenie zajęć:
Zakład Molekularnych Mechanizmów Komórkowych, Uniwersytet Medyczny w Łodzi

Dane kontaktowe jednostki organizacyjnej:
Zakład Molekularnych Mechanizmów Komórkowych, Mazowiecka 6/8,
katarzyna.sobierajska@umed.lodz.pl; tel: 42 272 57 22

Limit liczby uczestników:
12

Czas trwania zajęć:
20 godzin (4 × 5 godzin)

Sylabus (in English):
Title: Methods for analyzing cell motility
Description:
The course combines theoretical introduction and practical workshops focused on methods for studying cell motility. During the first session, students will gain essential theoretical knowledge about adhesion, migration, invasion, and wound healing assays. The following classes will include practical demonstrations of experimental approaches, analysis of sample results, and guided problem-solving exercises. Students will also discuss how to design and prepare motility experiments, including controls and data interpretation, with applications in cancer research, regenerative medicine, and drug discovery.

Learning outcomes:

After completing the course, students will be able to:

- describe the molecular and cellular mechanisms underlying adhesion, migration, invasion, and wound healing,

- understand the workflow and critical steps of experimental assays used to study cell motility,

- observe and interpret demonstrations of motility assays and discuss common technical issues,

- design basic experimental setups for adhesion, migration, invasion, and wound healing studies, including appropriate controls,

- critically evaluate data from motility experiments and propose improvements in experimental design,

Course outlines

Introduction to cell motility – cytoskeleton, adhesion, extracellular matrix (5h)

Adhesion and transmigration assays (5h)

Invasion assays and (5h)

wound healing methodology(5h)