

Molecular pathophysiology

Elective subject, 3.year. Summer semester

Timetable, study year 2025/2026

Study program: General medicine ;

Study period: 6. Semester

Category: elective ;

Range of courses: 14 h/ semester;

Study form: **Lectures**

Form of graduation: Exam; Credits: 2

Venue: Department of Pathophysiology, 8th floor, 2nd section

	Date	Time	Lecture	Lecturer
1.	20.2.2026 Friday	13:00 – 15:15	Molecular endocrinology – Cellular signaling 1	Doc. MUDr. R. Beňačka, CSc.
2.	27.2.2026 Friday	14:00 – 15:30	Cell damage and death Channelopathies	Doc. MUDr. R. Beňačka, CSc.
3.	27.3.2026 Friday	13:00 – 14:30	Oxidative damage of cells and tissues; redox homeostasis	MVDr. E. Lovásová, PhD
4.	10.4.2026 Friday	13:00 – 14:30	Molecular basis of inflammation & healing process	Doc. MUDr. R. Beňačka, CSc.
5.	17.4.2026 Friday	13:00 – 14:30	Molecular genetics, epigenetics	MVDr. E. Lovásová, PhD
6.	15.5.2026 Friday	13:00 – 14:30	Molecular carcinogenesis	Doc. MUDr. R. Beňačka, CSc.
		14.30 -15.15	Credit evaluation	Doc. MUDr. R. Beňačka, CSc.

- Presented as tutorial lectures with discussion to given topics
- Attendance of students in the lectures is required for the credit
- Exam is performed via written test (open questions) with further discussion

Recommended resources for individual study and provided by teachers :

1. Materials from the presentations; lectures/handouts
2. Basic of cell signaling. http://www.wiley-vch.de/books/sample/3527313974_c01.pdf, 20.2.2016
3. Cell signaling: <http://www.physiology.sdu.edu.cn/Medical%20Books/cell%20signal%20biology/module%20%20cell%20signaling%20pathways.pdf>
4. Reactive oxygen species. https://en.wikipedia.org/wiki/Reactive_oxygen_species
5. Oxidative stress. https://en.wikipedia.org/wiki/Oxidative_stress
6. Kumar, V. Abbas, A.K., Aster, J.C. Fausto, N.: Robbins & Cotran Pathologic Basis of Disease. Online Access, 8th Ed, Saunders, 1464 p., 2014 (ISBN-10: 1416031219)

Other interesting resources used in the education:

7. Runge, M. S., Patterson, C. (Ed.): Principles of molecular medicine. 2.ed., Humana Press, New Jersey, 2006, 1304 s., ISBN-10: 1588292029 (chosen chapters)
8. Lang, F. (Ed.): Encyclopedia of Molecular Mechanisms of Disease. Springer, Berlin, 2009, 766 s. (ISBN-10: 3540671366)

Košice, 9.2.2026

Doc. MUDr. Roman Beňačka, CSc.