Faculty of Medicine in Rijeka

**Curriculum**
**2025/2026**

For course

# Stem Cells and Cell-Based Therapy

| | |
|---|---|
| Study program: | **Medical Studies in English (R)** (elective)<br>University integrated undergraduate and graduate study |
| Department: | **Department of Histology and Embryology** |
| Course coordinator: | **prof. dr. sc. Polić Bojan, dr. med.** |
| Year of study: | **2** |
| ECTS: | **1.5** |
| Incentive ECTS: | **0 (0.00%)** |
| Foreign language: | **Possibility of teaching in a foreign language** |

## Course information:

Stanična terapija je pojam koji opisuje proces korištenja stanica u oporavaku oštećenog tkiva ili liječenju malignih bolesti

Ciljevi kolegija su:

- Navesti stanice koje se potencijalno mogu rabiti u staničnoj terapiji
- Opisati najnovije trendove u istraživanju matičnih stanica
- Opisati različite mogućnosti primjene stanične terapije
- Opisati upotrebu stanične terapije u kliničkoj praksi
- Analizirati probleme i rizike u liječenju stanicama
- Opisati tehnike izolacije, karakterizacije i kultivacije stanica za potrebe stanične terapije

## List of assigned reading:

„Stem cells – A very short introduction“ – by Jonathan Slack, Oxford University Press, 2016.

## List of optional reading:

Izbor znanstvenih radova i revija iz područja istraživanja matičnih stanica i stanične terapije ( www.pubmed.org)

## Curriculum:

**Lectures list (with titles and explanation):**

**Biology of Stem Cells**

**Embryonic Stem Cells**

**Induced Pluripotent Stem Cells**

**Epidermal and Neural Stem Cells**

**Hematopoeitic and Msenchymal Stem Cells**

**Seminars list (with titles and explanation):**

**Biological properties of stem cells**

**Use of induced pluripotent stem cells (iPSC) in cell-based therapy**

**Use of induced pluripotent stem cells (iPSC) in disease modelling**

**Haematopoietic stem cells**

**Mesenchymal stem cells**

**Epidermal stem cells**

**Neuronal stem cells**

## Student obligations:

Studenti su dužni redovito pohađati nastavu. Dopušteno je do 30% opravdanog izostanka sa nastave.

Predviđeno je da tijekom seminara studenti prezentiraju pojedine radove iz recentne znanstvene literature te da se potiče rasprava po pojedinim temama.

## Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Nazočnost na nastavi (predavanja i seminari) te izvršena prezentacija jedne zadane teme.

Ocjenjivanje studenata će biti kontinuirano po načelu 70% bodova tijekom nastave, a 30% bodova na završnom ispitu. Na nastavi student može zaraditi 5% bodova redovitim prisustvom na nastavi, 15% bodova aktivnošću na seminarima te 50% bodova seminarskim radom. Uvjet za pristup ispitu je najmanje 35% ukupnih bodova sakupljenih tijekom nastave. Završni ispit će se polagati testom (30% bodova).

## Other notes (related to the course) important for students:

Aktivnost studenata će biti kontinuirano praćena i ocjenjivana. Također, biti će nadziran i rad suradnika tijekom izvedbe nastave. Uspjesi na ispitima će biti pomno analizirani. Studenti će nakon odslušane nastave ispuniti anonimnu anketu o njihovom viđenu sadržaja i izvedbe nastave.

## COURSE HOURS 2025/2026

Stem Cells and Cell-Based Therapy

| **Lectures**<br>(Place and time or group) | **Seminars**<br>(Place and time or group) |
|---|---|
| **18.03.2026** | |
| Biology of Stem Cells:<br>• ONLINE (09:00 - 10:00) [145]<br>  ◦ SCACBT<br><br>Embryonic Stem Cells:<br>• ONLINE (10:00 - 11:00) [145]<br>  ◦ SCACBT<br><br>Induced Pluripotent Stem Cells:<br>• ONLINE (11:00 - 12:00) [145]<br>  ◦ SCACBT | |
| prof. dr. sc. Polić Bojan, dr. med. [145] | |
| **20.03.2026** | |
| Epidermal and Neural Stem Cells:<br>• ONLINE (11:00 - 12:00) [145]<br>  ◦ SCACBT<br><br>Hematopoeitic and Msenchymal Stem Cells:<br>• ONLINE (12:00 - 13:00) [145]<br>  ◦ SCACBT | |
| prof. dr. sc. Polić Bojan, dr. med. [145] | |
| **25.03.2026** | |
| | Biological properties of stem cells:<br>• ONLINE (08:00 - 10:30) [145]<br>  ◦ SCACBT<br><br>Use of induced pluripotent stem cells (iPSC) in cell-based therapy:<br>• ONLINE (10:30 - 13:00) [145]<br>  ◦ SCACBT<br><br>Use of induced pluripotent stem cells (iPSC) in disease modelling:<br>• ONLINE (13:00 - 15:30) [145]<br>  ◦ SCACBT |
| prof. dr. sc. Polić Bojan, dr. med. [145] | |
| **27.03.2026** | |
| | Haematopoietic stem cells:<br>• ONLINE (10:00 - 12:30) [145]<br>  ◦ SCACBT<br><br>Mesenchymal stem cells:<br>• ONLINE (12:30 - 15:00) [145]<br>  ◦ SCACBT<br><br>Epidermal stem cells:<br>• ONLINE (15:00 - 17:30) [145]<br>  ◦ SCACBT<br><br>Neuronal stem cells:<br>• ONLINE (17:30 - 19:00) [145]<br>  ◦ SCACBT |

prof. dr. sc. Polić Bojan, dr. med. [145]

### List of lectures, seminars and practicals:

| LECTURES (TOPIC) | Number of hours | Location |
|---|---|---|
| Biology of Stem Cells | 1 | ONLINE |
| Embryonic Stem Cells | 1 | ONLINE |
| Induced Pluripotent Stem Cells | 1 | ONLINE |
| Epidermal and Neural Stem Cells | 1 | ONLINE |
| Hematopoeitic and Msenchymal Stem Cells | 1 | ONLINE |

| SEMINARS (TOPIC) | Number of hours | Location |
|---|---|---|
| Biological properties of stem cells | 3 | ONLINE |
| Use of induced pluripotent stem cells (iPSC) in cell-based therapy | 3 | ONLINE |
| Use of induced pluripotent stem cells (iPSC) in disease modelling | 3 | ONLINE |
| Haematopoietic stem cells | 3 | ONLINE |
| Mesenchymal stem cells | 3 | ONLINE |
| Epidermal stem cells | 3 | ONLINE |
| Neuronal stem cells | 2 | ONLINE |

### EXAM DATES (final exam):