



Pomeranian Medical University in Szczecin

SYLLABUS of the STEM CELLS IN DENTISTRY General Information

| Module title: Stem cells in dentistry | |
|---|---|
| Module type | Facultative |
| Faculty PMU | Faculty of Medicine and Dentistry |
| Major | Dentistry |
| Level of study | long-cycle (S2J) |
| Mode of study | full-time studies |
| Year of studies, semester | Year II, semester I |
| ECTS credits (incl. semester breakdown) | 2 |
| Type/s of training | lectures (25h) |
| Form of assessment* | <input checked="" type="checkbox"/> graded assessment: <ul style="list-style-type: none"> <input type="checkbox"/> descriptive <input checked="" type="checkbox"/> test <input type="checkbox"/> practical <input type="checkbox"/> oral <input type="checkbox"/> non-graded assessment <input type="checkbox"/> final examination <ul style="list-style-type: none"> <input type="checkbox"/> descriptive <input type="checkbox"/> test <input type="checkbox"/> practical <input type="checkbox"/> oral |
| Head of the Department/ Clinic, Unit | Prof. dr hab. n. med. Bogusław Machaliński |
| Tutor responsible for the module | Dr n. med. Alicja Zawislak alicja.zawislak@pum.edu.pl |
| Department's/ Clinic's/ Unit's website | Zakład Patologii Ogólnej www.pum.edu.pl |
| Language | English |

* replace ☐ into ☒ where applicable

Detailed information

| | | |
|--------------------------------------|-------------|--|
| Module objectives | | The main didactic objective of “Stem cells in dentistry” is gaining knowledge of basic molecular biology in the context of usage in dentistry, and development of skills based on connection between basic sciences and clinical practice. |
| Prerequisite /essential requirements | Knowledge | Basic knowledge of biological processes in the human body. Knowledge of the morphology and physiology of the oral cavity. |
| | Skills | - |
| | Competences | Has a habit of self-education, understands the necessity of lifelong learning. |

Description of the learning outcomes for the subject /module

| No. of learning outcome | Student, who has passed the (subject) knows /is able to /can: | SYMBOL (referring the standards) | Method of verification of learning outcomes* |
|--------------------------------|---|---|---|
| W01 | knows and understands human body structures: cells, tissues and systems with particular regard to stomatognathic system | A.W1 | ET |
| W02 | knows and understands structure and functions of significant chemical compounds found in human body. In particular properties, functions, metabolism and energy aspects of proteins, nucleic acids, carbohydrates, lipids, enzymes and hormones reactions | B.W4 | ET |
| W03 | knows and understands issues of genetics and molecular biology | B.W17 | ET |
| W04 | knows and understands concepts of health and disease, mechanisms of developing disease on molecular, cellular, tissular and systemic level, clinical symptoms of disease, prognosis and its complications | C.W13 | ET |
| W05 | knows and understands symptoms, course and treatment methods of specified diseases of oral cavity, head and neck with regard to age groups | F.W4 | ET |

| Table presenting LEARNING OUTCOMES in relation to the form of classes | | | | | | | | |
|--|---|------------------|---------|-----------|------------------|-------------|------------|----------|
| No. of learning outcome | Learning outcomes | Type of training | | | | | | |
| | | Lecture | Seminar | Practical | Clinical classes | Simulations | E-learning | Other... |
| W01 | knows and understands human body structures: cells, tissues and systems with particular regard to stomatognathic system | X | | | | | | |
| W02 | knows and understands structure and functions of significant chemical compounds found in human body. In particular properties, functions, metabolism and energy aspects of proteins, nucleic acids, carbohydrates, lipids, enzymes and hormones reactions | X | | | | | | |
| W03 | knows and understands issues of genetics and molecular biology | X | | | | | | |
| W04 | knows and understands concepts of health and disease, mechanisms of developing disease on molecular, cellular, tissular and systemic level, clinical symptoms of disease, prognosis and its complications | X | | | | | | |
| W05 | knows and understands symptoms, course and treatment methods of specified diseases of oral cavity, head and neck with regard to age groups | X | | | | | | |

| Table presenting TEACHING PROGRAMME | | | |
|--|--|--------------|---------------------------------|
| No. of a teaching programme | Teaching programme | No. of hours | References to learning outcomes |
| Winter semester | | | |
| Lectures | | | |
| TK01 | Molecular dentistry – a promising area of dentistry | 2 | W01, W03, W04 |
| TK02 | Head and oral cavity development including molecular aspects | 2 | W01, W03 |
| TK03 | Orofacial birth defects Part I | 2 | W01, W04, W05 |
| TK04 | Orofacial birth defects Part II | 2 | W01, W04, W05 |
| TK05 | Syndromic congenital anomalies Part I | 2 | W01, W04, W05 |
| TK06 | Syndromic congenital anomalies Part II | 2 | W01, W04, W05 |
| TK07 | Genetic dental anomalies and masticatory organ disorders | 2 | W01, W04 |
| TK08 | Stem cells and their sources in the human body | 2 | W01, W02, W03 |
| TK09 | Stem cells in the oral cavity Part I | 2 | W01, W02, W03 |
| TK10 | Stem cells in the oral cavity Part II | 2 | W01, W02, W03 |

| | | | |
|------|---|---|-------------------------|
| TK11 | Biomaterials used in the formation of tissue scaffolds. Stem cell banking. | 2 | W01,W03 |
| TK12 | Regenerative medicine in endodontics, dental and maxillofacial surgery | 2 | W03,W04,W05 |
| TK13 | Repetition. Final test. | 1 | W01,W02,W03, W04,W05 |

Booklist

Obligatory literature:

1. „Dental Stem Cells: Regenerative Potential” Zavan Barbara; Birkhauser 2016

2. „Stem Cells & Dentistry” Mohammed Faraz; Lambert 2012

Student's workload

| Form of student's activity (in-class participation; activeness, produce a report, etc.) | Student's workload [h] |
|--|------------------------|
| | Tutor |
| Contact hours with the tutor | 25 |
| Time spent on preparation to seminars/ practical classess | 0 |
| Time spent on reading recommended literature | 5 |
| Time spent on writing report/making project | 0 |
| Time spent on preparing to colloquium/ entry test | 3 |
| Time spent on preparing to exam | 0 |
| Other | 0 |
| Student's workload in total | 33 |
| ECTS credits for the subject (in total) | 2 |
| Remarks | |
| | |

* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedial presentation

other...