Master's theses – DDD - The academic year 2025/2026

Students interested in the research topics (see below) conducted at the **Department of Technology and Biotechnology of Drugs in 2025/26** (computer methods in drug design, chemical synthesis, pharmaceutical biotechnology) may apply for the MA thesis.

The registration schedule will be announced on the Department's website at the beginning of June 2025 (before June 9, 2025).

Proposed Supervisors and topics for master's theses at the Department of Technology and Biotechnology of Drugs in 2025/26:

1. Name of the supervisor of the thesis
Prof. dr hab. Jadwiga Handzlik

2. Contact details
j.handzlik@uj.edu.pl

3. Research topics topic – MedChem
Design and synthesis of new compounds acting as GPCR ligands/CNS targets agents/MDR modulators.

4. Information about the type of research within the thesis
Experimental

5. Requirements:
Interest in medicinal chemistry, organic chemistry, CADD. Diligence in laboratory work, regularity, and punctuality.

6. Additional information
The obtained results may be presented during domestic or international conferences related to Medicinal chemistry.

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1. Name of the supervisor of the thesis
Dr inż. Ewelina Honkisz-Orzechowska

2. Contact details
ewelina.honkisz@uj.edu.pl

3. Proposed research topic

Phagocytic activity in a mouse model of *in vitro* neuroinflammation induced by LPS and IFN-gamma.

4. Information about the type of research within the thesis
Experimental work using cell culture *in vitro* techniques, gene expression analysis (qPCR), biochemical assay (mitochondrial membrane potential, reactive oxygen species, phagocytosis).

5. Requirements:
Willingness to work in the laboratory, availability, open mind, commitment to the subject, and willingness to continue scientific development.

6. Additional information
Possibility of presenting the obtained results at scientific conferences and in the form of publications.

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1. Name of the supervisor of the thesis
Dr Tadeusz Karcz

2. Contact details
t.karcz@uj.edu.pl

3. Proposed research topic
MedChem, Experimental Pharmacology
Characterization of biological activity and drug-like properties of novel drug candidates targeting G protein-coupled receptors and therapeutic enzymes.

4. Information about the type of research within the thesis
Experimental project, involving the application of animal cell culture and molecular biology techniques.

5. Requirements:
Interest in topic of study, strong motivation to learn new laboratory techniques, ability to follow the arrangements and to keep the deadlines.

6. Additional information
If you have a specific idea for your master project – shoot me an e-mail and we may arrange your study according to your proposal.

1. Name of the supervisor of the thesis
Dr hab. Kamil Kuder

2. Contact details
kamil.kuder@uj.edu.pl

3. Proposed research topics
Computer aided drug design / discovery. Design and/or docking of small molecules libraries to selected protein targets in the group of GPCRs and selected enzymes.

4. Information about the type of research within the thesis
Experimental project, involving computational methods in drug discovery.

5. Requirements
Interest in topic of study, medium level computer skills, and easy-going attitude.

6. Additional information
However, the area of scientific interest has been more or less outlined, ingenuity, an open mind, and new ideas for research paths are welcome and taken into account when working on the topic of the proposed research. Feel free to contact me via e-mail.

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1. Name of the supervisor of the thesis
Dr hab. Gniewomir Latacz, prof. UJ

2. Contact details
gniewomir.latacz@uj.edu.pl

3. Research topics topic – MIDD, Experimental Pharmacology
The determination of ADME-Tox parameters using *in vitro* methods based on biochemical and cell-culture based methods (research are a part of several ongoing grants and projects).

4. Information about the type of research within the thesis
Experimental

5. Requirements:
Interest in medicinal chemistry and biotechnology. Diligence in laboratory work, regularity, and punctuality.

6. Additional information
The obtained results may be presented during domestic or international conferences related to Medicinal chemistry.

1. Name of the supervisor of the thesis
Dr hab. Dorota Łażewska

2. Contact details
dorota.lazewska@uj.edu.pl

3. Proposed research topics
Design and synthesis of new compounds acting as GPCR ligands/CNS target agents/ selected enzyme inhibitors.

4. **Information about the type of research within the thesis**
Experimental

5. Requirements
Interest in organic and medicinal chemistry. Diligence in laboratory work, regularity, and punctuality. Willingness to work in a chemical laboratory (organic synthesis).

6. Additional information
The obtained results may be presented during domestic or international conferences related to Medicinal Chemistry.

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1. Name of the supervisor of the thesis
Dr hab. Ewa Szymańska

2. Contact details
ewa.szymanska@uj.edu.pl

3. Research topics topic – Synthetic and medicinal chemistry
Design and synthesis of organic compounds as ligands for GPCR and/or sigma-1 receptors (research are a part of ongoing grants and projects).

4. Information about the type of research within the thesis
Experimental

5. Requirements:
Interest in medicinal chemistry and organic chemistry. Diligence in laboratory work, regularity, and punctuality. Willingness to work in the laboratory in synthetic chemistry, analysis of spectral data.

6. Additional information
The obtained results may be presented during domestic or international conferences related to Medicinal chemistry.
