

**Department of Pharmacology and Pharmacotherapy**  
**DIPLOMA WORK TOPICS**

**2025/2026**

**(for 4th year medical students in 2023/2024)**

1. Investigation of comorbidity factors and simulated ischemia/reperfusion in isolated cardiac myocyte cultures

Supervisor: Dr. Anikó Görbe Associate Professor, Dr. András Makkos research associate, Regina Norma Nagy PhD student

2. Investigation of citoprotective microRNAs in small animal models

Supervisor: Dr. Anikó Görbe, Associate Professor, Dr. András Makkos research associate, Regina Norma Nagy PhD student

3. Investigation of Hidden cardiotoxicity in isolated cardiac myocyte cultures

Supervisor: Dr. Anikó Görbe, Associate Professor, Regina Norma Nagy PhD student

4. Microvascular obstruction and endoplasmic reticulum-mitochondria interaction in the aetiology of cardiac ischemia/reperfusion injury

Supervisor: Gábor Mórotz PhD, AFHEA research fellow

5. Inflammation and endoplasmic reticulum-mitochondria interaction in the aetiology of heart failure

Supervisor: Gábor Mórotz PhD, AFHEA research fellow

6. The role of ketamine, an NMDA receptor channel blocking agent, in depression and schizophrenia

Tutor: Dr. László Hársing M.D., Ph.D., D.Sc., senior research associate

7. Trace amine associated receptor 1 and its ligands in psychiatric disorders

Tutor: Dr. László Hársing M.D., Ph.D., D.Sc., senior research associate

8. The interaction between opioid and angiotensin systems in relation to chronic pain

Tutor: Dr. Mahmoud Al-Khrasani associate professor, Dr. Kornél Péter Király assistant professor

9. The impact of gut microbiom alterations in the development of opioid analgesic tolerance

Tutor: Dr. Mahmoud Al-Khrasani associate professor

10. The role of spinal glycinergic system in the development of opioid analgesic tolerance

Tutor: Dr. Mahmoud Al-Khrasani associate professor

11. The role of tyrosine kinase receptors in the development and management of neuropathic pain

Tutor: Dr. Mahmoud-Al-Khrasani, associate Professor

12. Inflammation as a novel therapeutic target in cardiovascular diseases

Tutor: Dr. Zoltán Varga, senior research associate

13. Cardiotoxicity as a side effect of cancer chemotherapy

Tutor: Dr. Zoltán Varga, senior research associate