ANIKÓ GÖRBE

Semmelweis University
Faculty of Medicine
Department of Pharmacology and Pharmacotherapy

Address: Nagyvárad tér 4., H-1089 Budapest, Hungary

RESEARCH AREA

In experimental cardiology models, several studies have already demonstrated that the reperfusion phase following cardiac oxygen deprivation activates processes that lead to further damage of myocardial tissue. However, there are protective mechanisms that can reduce the extent of damage. However, failures in clinical trials show that these mechanisms are not sufficiently effective in ischemic heart patients. Preclinical data suggest that co-morbidities such as hyperlipidemia, metabolic syndrome, diabetes mellitus-induced tissue changes and drug treatment of these diseases have a strong interfering effect. Furthermore, the presence of ischaemia/reperfusion injury and co-morbidities poses additional risks, as the hidden side effects of many drugs are only seen in such cases. Our research addresses the potential cardioprotective effects of microRNAs. The development of noncoding RNAs (such as microRNAs) as molecules of diagnostic and therapeutic value has in recent years brought them to the forefront of the pharmaceutical industry for the precision diagnosis and treatment of a number of diseases.

TECHNIQUES AVAILABLE IN THE LAB

- use of an in vitro simulated ischemia/reperfusion test system
- performing fluorescence and luminescence viability tests on myocardial cells
- construction of a primary rat cardiomyocyte model
- culture of cell lines, preparation of cell banks, frozen storage
- drug treatments in in vitro cell-based systems
- MMP zymography measurements to test the efficacy of matrix metalloproteinase enzyme inhibitors
- western blotting techniques for protein expression monitoring and identification
- qPCR technique to monitor and identify mRNA expression
- ELISA measurements for the identification of biomarkers

SELECTED PUBLICATIONS

Makkos A., Ágg B., Varga ZV., Giricz Z., Gyöngyösi M., Lukovic D., Schulz R., Barteková M., **Görbe A.**, Ferdinandy P. (2021) Molecular Network Approach Reveals Rictor as a Central Target of Cardiac ProtectomiRs. **Int J Mol Sci. 22:** 9539.

Bencsik, P., Gömöri, K., Szabados, T., Sántha, P., Helyes, Z., Jancsó, G., Ferdinandy, P., **Görbe, A.** (2020) Myocardial ischemia reperfusion injury and cardioprotection in the presence of sensory neuropathy: therapeutic options. **Br J Pharmacol 177:** 5336-5356.

Makkos, A., Ágg, B., Petrovich, B., Varga, Z.V., **Görbe, A.**, Ferdinandy, P. (2021) Systematic review and network analysis of microRNAs involved in cardioprotection against myocardial ischemia/reperfusion injury and infarction: Involvement of redox signalling. **Free Radic Biol Med 172:** 237-251.

Gömöri, K., Szabados, T., Kenyeres, É., Pipis, J., Földesi, .I, Siska, A., Dormán, G., Ferdinandy, P., **Görbe, A.**, Bencsik, P. (2020) Cardioprotective Effect of Novel Matrix Metalloproteinase Inhibitors. **Int J Mol Sci. 21:** E6990.

Pálóczi, J., Szántai, Á., Kobolák, J., Bock, I., Ruivo, E., Kiss, B., Gáspár, R., Pipis, J., Ocsovszki, I., Táncos, Z., Fehér, A., Dinnyés, A., Onódi, Z., Madonna, R., Ferdinandy, P., **Görbe, A.** (2020) Systematic analysis of different pluripotent stem cell-derived cardiac myocytes as potential testing model for cardiocytoprotection. **Vascul Pharmacol 133-134:** 106781.