

The aim of the project is to investigate antiplatelet mechanisms of CO-releasing compounds (CORMs): comparison of CORMs with different kinetic of CO-releasing, research influence on blood platelets adhesion (using unique system of Quartz Crystal Microbalance with Dissipation Monitoring: QCM-D by Q-Sense, using sensors coated with nanobrushes with RGD-sequence) and examination their influence on platelet metabolism.

Working-hypothesis: Indirect antiplatelet effect of CO-releasing compounds may be related with theirs influence on platelet bioenergetic processes. Precise examination of bioenergetics effect of CORMs on platelets, using extracellular flux analysis (XF24, Seahorse Biosciences) and mileage of process of adhesion platelets treated with CORMs leads to finding explanation of this phenomenon.

The CO-releasing compounds (CO-releasing molecules: CORMs) seem to be very promising group of potential new therapeutics, which may be used in antiplatelet therapy and could be used in a variety of disorders associated with the activation of platelets, such as cardiovascular disease and cancer.

Planned in this project research on the effects of compounds releasing CO on glycolysis and mitochondrial respiration and metabolism of blood platelets, using extracellular flux analysis (XF24, Seahorse Biosciences), helps explain the mechanism of antiplatelet activity of these compounds and using unique system of Quartz Crystal Microbalance with Dissipation Monitoring (QCM-D by Q-Sense) with sensors coated with nanobrushes with RGD-sequence will allow for a better understanding of participation of the metabolic mechanisms in the antiplatelet impact of CO.