

The aim of the study is to evaluate the role of gut bacteria and methylamines produced by gut bacteria in the development of high blood pressure (hypertension). Recently, it has been found that both animal and human hypertension is associated with disturbances in gut microflora. Increasing evidence suggests that methylamines produced by gut bacteria may contribute to the etiology of cardiovascular diseases. For example, recent clinical studies show that patients with high blood TMAO, a gut-derived methylamine, have an increased risk of heart attack, stroke and death. This study will be performed on rats that will be maintained either on water or water containing investigated methylamines. We will check the effect of the methylamines on arterial blood pressure and the development of hypertension.

Hypertension and its complications are a leading cause of death and disability in adults. We believe that our study will clarify the role of gut-derived methylamines in the circulatory system homeostasis, and etiology of cardiovascular diseases, in particular in hypertension. This study may be important for assessing feasibility of developing new drugs which may exert beneficial effects by changing the synthesis of methylamines produced by bacteria in human intestines.