

## **Popular science summary**

### **The influence of the extract from *Potentilla erecta* rhizome on haemostasis in type 1 diabetes**

Ellagitannins are the class of compounds present in pomegranates, walnuts, oak-age wine. Due to their anti-inflammatory and antioxidant properties ellagitannins are considered as a promising agents in the prevention and treatment of cardiovascular diseases. In our previous study, for the first time we have shown that ellagitannin-rich tormentil extract reduces thrombus weight in the artery of healthy animals which indicates its antithrombotic properties. However we observed that extract from *P. erecta* rhizome enhances fibrin generation which contributes to the increase of thrombus stability. The enhancement of fibrin formation is the result of increased activity of coagulation system and it indicates also the prothrombotic activity of extract. Therefore the main goal of this project is further investigation of the mechanism of action of extract from *P. erecta* rhizome especially in the organisms with increased activation of coagulation system namely type 1 diabetes.

For this purpose, rats and mice with type 1 diabetes will be used in planned research. Experiments with rats will be carried out to verify whether extract from *P. erecta* rhizome reduces thrombus size in diabetes. While in mice, the special staining will be performed to point out the particular structures on the blood cells and the vessel wall which activity in the process of thrombus formation may be changed after treatment with extract. It enable to assess the mode of action of extract.

Extract from *P. erecta* rhizome can become an antithrombotic drug in the future. However, in a view of enhanced fibrin generation the extract may not display the antithrombotic effect in a state with increased activity of coagulation system and put into question the favorably effect of ellagitannins as well as ellagitannin-rich food in patients with increased risk of thromboembolic events. On the other hand, the beneficial activity of ellagitannins in healthy organism but with the risk of developing cardiovascular diseases in the future cannot be excluded.