

## Abstract

The root of *Panax notoginseng* (Burk.) F. H. Chen (*Sanqi* in Chinese) is a valuable and commonly used Chinese medicine. It is known for its efficacy in promoting blood circulation, removing blood stasis, inducing blood clotting, relieving swelling, and alleviating pain. It has been widely used for treatment of cardio- and cerebro-vascular diseases. But the compounds which are mainly contribute to the beneficial effects such as antiplatelet aggregation on cardiovascular and cerebrovascular systems is still unknown.

A conventional procedure for finding bioactive components is extraction of traditional Chinese medicines (TCMs) followed by pharmacological assay of the purified compounds. In addition, screen of bioactive compounds carried out on animal models are time-consuming, labor-intensive, expensive and low efficient for directly screening bioactive compounds from TCMs. Modern pharmacological studies have shown that combining with some receptors or channels on cell membrane is the first step of drug action. In present study, a method, human platelet biospecific extraction and HPLC-DAD-MS/MS, was developed for screening anti-platelet agents from *Panax notoginseng*. The thesis includes:

1. Human platelet biospecific extraction and HPLC/ESI-MS/MS was developed and applied for screening potential antiplatelet agents in *Sanqi*. Two nucleosides, guanosine and adenosine, and 3 saponins were found in *P. notoginseng*.
2. The anti-platelet aggregation of adenosine, guanosine and three extracts from *P. notoginseng* were also investigated and compared *in vitro*. Guanosine and adenosine had strong inhibition of platelet aggregation induced by ADP, AA and THR.

3. Simultaneous quantification of guanosine and adenosine in different parts of *P. notoginseng* from different locations was performed by using HPLC-DAD. The contents of the two nucleosides from the same parts were similar, but varied in the samples from the different locations.

The data suggest that human platelet biospecific extraction and HPLC-DAD-MS/MS is a useful method for screening antiplatelet agents from Chinese medicines.

**Keywords:** Human platelet biospecific extraction; *Panax notoginseng*; HPLC-MS; Antiplatelet aggregation; Nucleosides; Saponins