



Fig. 1. Some anatomical features of *S. excelsa* leaves and the localization of phenolic compounds

## RESEARCH IN PHENOLIC COMPOSITION OF CHAENOMELES JAPONICA SEEDS BY THE HPLC METHOD

Hovtvian D.K.

Scientific supervisors: Koshovyi O. M., Monika Cherwinska

National University of Pharmacy, Kharkiv, Ukraine

Medical University of Warsaw, Warsaw, Poland

dusya.gov@gmail.com

**Introduction.** The *Chaenomeles* species belong to the Rosaceae family (Apple subfamily) and have been widely known in China for thousands years. In Europe, interest in these fruits has been systematically growing over the last twenty years. In vitro and in vivo studies have confirmed the anti-inflammatory, analgesic, antispasmodic, antioxidant, immunomodulatory and antibacterial effects of extracts from this fruit species. The using of the fruits of the genus *Chaenomeles* is recommended for a wide range of diseases such as rheumatism, beriberi disease, cholera, dysentery

and enterocolitis. In particular, Japanese quince products have been proposed to treat stomach ailments, relieve diarrheal symptoms and vomiting, and protect against liver disease. Japanese quince contains flavonoids (quercetin, luteolin, catechin, epicatechin, procyanidin B1 and B2), triterpenes (oleanolic acid and ursolic acid), phenolic acids or depsides (chlorogenic acid), carbohydrates, amino acids, proteins and tannins. In the literature, the results of the study of fruits are mainly given.

**Aim.** The **aim** of our research was to study the phenolic compounds of Japanese quince seeds by the HPLC method.

**Materials and methods.** Raw plant materials of *Chaenomeles japonica* were collected in October 2018 in the Botanical Garden – Center for Biological Diversity Conservation in Powsin (Polish Academy of Sciences, Poland) (52°06'17" N, 21°05'42" E). HPLC-DAD-MSn analysis was performed on a UHPLC-3000 RS system (Dionex, Sunnyvale, California, CA, US) with DAD detection and an AmaZon SL ion trap mass spectrometer with ESI interface (Bruker Daltonik GmbH).

**Results and discussion.** According to HPLC results, Japanese quince seeds are rich in proanthocyanidins and phenolic compounds. The main phenolic group in the seeds of quince (*Chaenomeles japonica*) was phenolic acids. The results showed that the seeds of *Chaenomeles japonica* are extremely rich in polyphenolic compounds, among which the highest concentration of procyanidin oligomers, followed by phenolic acids (caffeylquinic, dicaffeoylquinic, chlorogenic, neochlorogenic, para-couaroylquinic, feruoyl-dicaffeoylquinic acid) feruoyl-cateffeoylquin -O-hexoside, quercetin-O-rhamnnohexoside, quercetin-O-dirhamnoghexaside, kaempferol 3-O-β-D- (6 " -O- (E) -p-coumaroyl) glucoside, kaempferol p-coumaroyl pentoside). Their quantitative content has been established.

**Conclusions.** The seeds of *Chaenomeles japonica* are very rich in phenolic compounds and are a promising raw material for obtaining new plant phytochemicals with various pharmacological effects.

## STUDY OF ACUTE TOXICITY OF LYOPHILIC EXTRACT PLANTAGO MEDIA L.

Khortetska T. V., Smoylovska G. P., Yerenko O. K., Maliuhina O. O.

Scientific supervisor: Mazulin O. V.

Zaporizhzhya State Medical University, Zaporizhzhya, Ukraine

profesor8707@gmail.com

**Introduction.** The experience of many generations proves that the plant world is an inexhaustible source of drugs that have long been used in folk medicine for the treatment of various diseases. The search and creation of medicinal herbs is one of the most important tasks of pharmacy. Purposeful search for biologically active substances and the study of their pharmacological properties are the most important tasks of the pharmacy. According to the literature and the results of previous studies have found that herbs *Plantago media* contains a number of biologically active substances, namely polysaccharides, vitamin K<sub>1</sub>, ascorbic acid, hydroxycinnamic acids, flavonoids, amino acids, aukubin, tannins etc.

The rich chemical composition of *Plantago media* L. indicates the multifaceted pharmacological effects of this plant. Plantain is widely used in the form of infusion (1 : 10) in the folk and official medicine around the world, primarily as a hemostatic remedy. It is was discovered that the leaves of these plants are applied to the wounds for rapid healing, as well as for pulling manure. Also established anti-inflammatory and wound-healing effect.

**Aim.** Study of acute toxicity of lyophilic extract based on infusion of leaves *Plantago media* L.