

## ABSTRACT

### DIPLOMA THESIS

#### **Purification of phlorizin from *Malus domestica* Borkh. by solid-phase extraction and semi-preparative high-performance liquid chromatography**

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The aim of this diploma thesis was to find the best conditions for purification of a flavonoid extract from leaves of *Malus domestica* Borkh., and obtaining the purest fraction of phlorizin. Phlorizin may be used in the treatment of diabetes mellitus type 2 in the future, it has the ability to reduce glycemia by reducing the absorption of glucose in the small intestine and by increasing urinary glucose excretion.

The first step was to find an SPE cartridge with a suitable sorbent and a suitable eluent for solid phase extraction. The DPA-6S cartridge and 100% methanol as an eluent were found to be the most suitable for SPE. The next step was to find the best possible conditions for semi-preparative HPLC using an ACE 5 C18 column (5 µm, C18, 150 x 10 mm i.d., 150 mm length). The mobile phase consisted of 1% (v/v) acetic acid in water (solvent A) and ethanol 100% (v/v) (solvent B), and a linear gradient elution was used (10–100% B), 0–60 min, the flow: 1 mL/min. This method resulted in the 91.05% purity of phlorizin.

Keywords: *phlorizin, SPE, semi-preparative HPLC, purification.*