ABSTRACT

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Selected plant species of the families *Papaveraceae*, *Fumariaceae* and *Ranunculaceae* were tested in terms of this thesis. Alkaloid content was evaluated by a thin-layer chromatography (TLC); ethanol and alkaloid extracts were tested for their cholinesterase inhibitory activity and antioxidant activity.

All of the studied species were tested for the cholinesterase inhibition activity by the Ellman's spectrophotometric method using the 5,5'-dithiobis-2-nitrobenzoic acid. The activity of extracts was compared with IC_{50} values of common inhibitors of cholinesterases: galanthamine (IC50 HuAChE = 2.59 ± 0.065 μg/ml, HuBuChE = 58.02 ± 1,30 μg/ml), and huperzine A (IC50 HuAChE = 0.061 ± 0.001 μg/ml, HuBuChE 1000 μg/ml). The highest cholinesterase inhibitory activity from the tested specimen showed ethanol extract from the aerial part of *Glaucium corniculatum* (IC_{50} AChE = 0,39 μg/ml, IC_{50} BuChE = 4,27 μg/ml). The species *G. corniculatum* can be considered to be suitable source of the cholinesterase inhibitors.

Extracts of all studied plant species were tested for the antioxidant activity by *in vitro* DPPH test. The highest antioxidant activity showed extract from the root of *Papaver argemone* (47,96 %).