

## Abstract

Kubincová, D.: Biological activity of plant metabolites XIV; Influence of alkaloids from *Chelidonium majus* L. on acetylcholinesterase. Rigorous work, Charles University in Prague, Faculty of Pharmacy Hradec Králové, 74 pp.

*Key words:* Alzheimer's disease, alkaloids, *Chelidonium majus*, acetylcholinesterase, biological activity.

Within the screening of plants that contain alkaloids inhibiting the activity of the human erythrocytic acetylcholinesterase Greater celadine (*Chelidonium majus* L., *Papaveraceae*) was studied. 41.8 kg of the whole dry plant (the aerial part with the roots) served for the isolation of alkaloids. Mixtures of pseudocyanides of benzophenanthridine alkaloids, phenolic bases, and the alkaloids precipitated from either chloroform-soluble or chloroform-insoluble chlorides were obtained from the purified ethanolic extract. My task was to separate bases from the chlorides insoluble in chloroform. Using both column and thin layer chromatography protopine as a base was isolated. The identity of the isolated alkaloid was determined by means of an authentic standard and by comparing its physico-chemical characteristics with the published data.

The isolated compound inhibited the human erythrocytic acetylcholinesterase with  $IC_{50}$   $1,12 \cdot 10^{-3}$  M. Comparing its biological activity with that of standard alkaloid inhibitors (galanthamine and physostigmine) the isolated substance is not very interesting regarding further studies of natural products that could serve as lead compounds for the development of potential drugs against the Alzheimer's disease.