ABSTRACT


Obtained diethylether extract of *Fumaria officinalis* L. was separated to fractions in column chromatography with petrol, chloroform and ethanol. Preparative TLC and crystallisation led to isolation of five alkaloids from fraction. Alkaloids were identified by GC-MS and NMR specters, optical rotation and melting point as protopine, cryptopine, (−)-fumaricine, (+)-fumarilene and (+)-parfumidine. Isolated alkaloids were tested for their inhibition activity towards acetyl- and butyrylcholinesterase and towards prolyloligopeptidase. Activities were compared with standards. Natural inhibitor galanthamine showed IC₅₀ AChE 1.710 ± 0.065 µM, IC₅₀ BuChE 42.30 ± 1.30 µM. Best inhibition activity showed protopine (IC₅₀ AChE 345.4 ± 24 µM, IC₅₀ BuChE 239.6 ± 22.3 µM) and cryptopine (IC₅₀ AChE 477.71 ± 47.33 µM, IC₅₀ BuChE 270.82 ± 39.12 µM). The highest prolyloligopeptidase inhibition activity showed (+)-parfumidine with IC₅₀ POP 99.2 µM, which was more active than used natural inhibitor baicaline (IC₅₀ POP 605.9 ± 0.021 µM). Synthetic POP inhibitor Z-Pro-prolinal has IC₅₀ POP 3.269 ± 0.02 nM.