ABSTRACT

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Eleven fractions were prepared for further processing, this was based on previously performed column chromatography of diethyl ether extract of Fumaria officinalis L. Two alkaloids were isolated by using preparative TLC of fraction 138-178, followed by crystallization. The alkaloids were identified based on their structural analysis – using MS and MNR spectrum, specific optical rotation and melting point as (-)-fumaritine and (+)-parfumine. Both alkaloids were tested for their inhibitory activities against prolyloligopeptidase, acetylcholine– and butyrylcholinesterases. The measured IC50 values were compared with the known standard values. Neither (-)-fumaritine nor (+)-parfumine showed more significant inhibitory activities against both cholinesterases compared to galantamine and huperzine A (IC50 ≥ 200 μM). (+)-Parfumine does not inhibit the prolyloligopeptidase at all, the inhibition activity of (-)-fumaritine is really mild compared to berberine (also IC50 ≥ 200 μM).

Key words: Fumaria officinalis L, isoquinoline alkaloids, (-)-fumaritin, (+)-parfumin, acetylcholinesterase, butyrylcholinesterase, prolyloligopeptidase, isolation, Alzheimer's disease.