Abstract

Isolation and characterization of compounds from *Nardostachys jatamansi* targeting acetylcholinesterase inhibitors based on TLC-bioautography

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Background and objectives: The cholinergic deficit correlates with the severity of Alzheimer's disease. The cholinergic function can be improved by AChE inhibitors blocking this key enzyme in the breakdown of acetylcholine. Based on traditional medicine, during two last decades the use of herbal medicinal substances in dementia therapy has been studied. *Nardostachys jatamansi* L. has been used in several systems of traditional medicine with various therapeutic properties, among those for the enhancement of cognitive performance in several herbal drug mixtures. A previous study showed AChE inhibition of the methanol extract of *Nardostachys jatamansi*.To find new natural compounds with AChE inhibitory effect in this study, the hypocotyl of *Nardostachys jatamansi* was investigated.
Method: The methanol extract was investigated by a respective enzymatic TLC bioautography assay to identify the active zones. Then two compounds were isolated using several chromatographic methods. **Resul**t: The structures of the isolated components were characterized by different methods such as one and two-dimensional ^{1}H and ^{13}C NMR spectroscopy and mass spectrometry. These substances were identified as jatamansic acid and docosanoic acid. TLC-bioautography of the isolated compounds are in precess.
Conclusion: This study can confirm the traditional use of this plant for enhancement of cognitive disorders and the isolated compound may be considered as the active candidates.

Keywords: AChE inhibitor, Alzheimer, *Nardostachys jatamansi*, TLC bioautography

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