

Securinine derivatives as potential anti-amyloid therapeutic approach

Neganova M.E.

Klochkov S.G.

Petrova L.N.

Shevtsova E.F.

Afanasieva S.V.

Chudinova E.S.

Fisenko V.P.

Bachurin S.O.

Barreto G.E.

Aliev G.

Background: Oxidative stress and amyloid deposition are tightly interconnected pathological features of Alzheimer disease. In this respect, both amyloid production and aggregation may be stimulated by oxidative stress and also the increase of pathogenic β -amyloid and its aggregated form lead to oxidative stress progression. Therefore, the search for potential drugs with both antioxidant and antiaggregation properties are of great interest. **Methods:** In this study, we described the stereospecific synthesis of alkaloid securinine aminoderivatives. **Results:** We showed that the newly synthesized compounds possess antioxidant and metal-chelating properties. Indeed, we report that one compound has inhibitory effects towards β -amyloid aggregation. **Conclusion:** Based on these results, aminoderivatives of securinine scaffold are promising compounds for development of new drugs for the treatment of neurodegenerative diseases. © 2017 Bentham Science

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Alkaloids

Antioxidant

Lipid peroxidation

Neurodegenerative diseases

Neuroprotection

Securinine

?-amyloid

amyloid beta protein

antioxidant

securinine

amyloid beta protein

amyloid beta-protein (1-42)

antioxidant

azepine derivative

fused heterocyclic rings

lactone

peptide fragment

piperidine derivative

securinine

animal experiment

antioxidant activity

Article

degenerative disease

fluorescence analysis

high performance liquid chromatography

IC50

lipid peroxidation

male

nonhuman

nuclear magnetic resonance spectroscopy

oxidative stress

rat

Alzheimer disease

amyloidosis

animal

chemistry

drug effect

human

metabolism

oxidative stress

Alzheimer Disease

Amyloid beta-Peptides

Amyloidosis

Animals

Antioxidants

Azepines

Heterocyclic Compounds, Bridged-Ring

Humans

Lactones

Male

Oxidative Stress

Peptide Fragments

Piperidines

Rats