

ISSN (Print): 1871-5273  
ISSN (Online): 1996-3181

Volume 15, 10 Issues, 2016

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(Formerly *Current Drug Targets - CNS & Neurological Disorders*)

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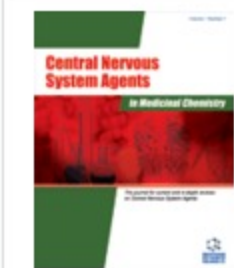
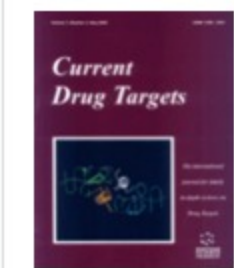
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### Natural Compounds and Plant Extracts as Therapeutics Against Chronic Inflammation in Alzheimer's Disease - A Translational Perspective

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#### Abstract:

Alzheimer's disease (AD) is a progressive neurodegenerative disorder, characterized by deposition of amyloid beta, neurofibrillary tangles, astrogliosis and microgliosis, leading to neuronal dysfunction and loss in the brain. Bio- and histochemical evidence suggests a pivotal role of central and peripheral inflammation in its aetiopathology, linked to the production of free radicals. Numerous epidemiological studies support that the long-term use of non-steroidal antiinflammatory drugs is preventive against AD, but these medications do not slow down the progression of the disease in already diagnosed patients. There are a number of studies focusing on traditional herbal medicines and small molecules (usually plant secondary metabolites) as potential anti-inflammatory drugs, particularly in respect to cytokine suppression. For instance,  $\omega$ -3 polyunsaturated fatty acids and a number of polyphenolic phytochemicals have been shown to be effective against inflammation in animal and cell models. Some of these plant secondary metabolites have also been shown to possess antioxidant, anti-inflammatory, anti-amyloidogenic, neuroprotective, and cognition-enhancing effects. This review will provide an overview the effects of catechins/proanthocyanidins from green tea, curcumin from turmeric, extracts enriched in bacosides from Brahmi (*Bacopa monnieri*), flavone glycosides from Ginkgo biloba, and  $\omega$ -3 polyunsaturated fatty acids. They do not only counteract one pathophysiological aspect of AD in numerous in vitro and in vivo studies of models of AD, but also ameliorate several of the above mentioned pathologies. The evidence suggests that increased consumption of these compounds might lead to a safe strategy to delay the onset of AD. The continuing investigation of the potential of these substances is necessary as they are promising to yield a possible remedy for this pervasive disease.

**Keywords:** Alzheimer's disease, inflammation, non-steroidal anti-inflammatory drugs, plant secondary metabolites, reactive oxygen species, treatment.

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ISSUE: 7  
Page: [1175 - 1191]  
Pages: 17  
DOI: 10.2174/1871527313666140917110635

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