Acetylcholinesterase inhibitor

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Technology description

"It is estimated that by 2050, 19 million people will be 65 or older, only in more developed countries. At least 50 per cent of them will suffer from some form of Alzheimer's disease."
Conclusion: Semisynthetic derivatives of plant extracts can be used as inhibitors of acetylcholinesterase (AchE).
Problem:
Alzheimer's disease (AD) is a highly socioeconomic pathology that accounts for 1.70% of deaths in developed countries. An estimated 243,000 people are affected and 46,000 new cases occur each year. (WHO, 2005). Alzheimer's disease is the fifth leading cause of death in the developed world, accounting for 168,000 deaths per year. (WHO, 2010). In the United States, 109,000 people are unpaid caregivers. Most of these caregivers are family members closely related to the patient, and as the disease progresses, this has a significant emotional and economic impact on the family, leading to death. From early symptoms to death, the disease progresses from 8.5 to 11 years with an average age of 4 to 6 years. (Alzheimer's Assoco, 2010) The estimated cost of treating AD worldwide is $315bi (Pfizer) ® , Company, 2009.
Proposed solution:
Enhance cholinergic activity in the central nervous system by controlling symptoms of Alzheimer's disease in the memory and learning regions and inhibiting AchE enzymes. This mechanism also allows for the control of muscular paralysis caused by chemical or biological agents, Myasthenia gravis And scopolamine poisoning.
Market potential:
In 2009, two major drugs for AD, rivastine and donepazide, were both AchE inhibitors, with sales of $954 mi and $432 mi, respectively. Demand for new drugs is high because large multinationals have retained the benefits of P& P; Line D to DA. Abnormal drug programmes in the federal and some state governments place a cost burden on drugs for diseases such as AD. The budget for 2004-2008 increased by 345 per cent, compared with 2.3 rupees last year.

Application area

It can be used for the treatment of degenerative neuropathy such as Alzheimer's disease and

Parkinson's disease, as well as other disorders related to cholinergic transmission such as Myasthenia gravis Muscle paralysis caused by chemicals scopolamine poisoning and other pathologies associated with memory loss.

Advantages

The plant species in question are endemic to the Atlantic agate, and the yield of the extracted compounds in the ethanol extract can reach 4%. The AchE enzyme was completely inhibit (100%) by that compound In the body , compared with the reversible inhibitor galantamine. They also reversed scopolamine-induced memory loss compared with tacrolimus and galantamine. The compound had no reported toxic effects on two commercial drugs used in preclinical trials.

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