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FILE: ▪ Rosemary (*Rosmarinus officinalis*)
▪ Alzheimer's Disease

HC 020383-355

Date: June 30, 2008

RE: Rosemary Is "Well Endowed" to Prevent and Treat Alzheimer's Disease

Duke JA. Rosemary, the herb of remembrance for Alzheimer's disease. *Altern Complement Ther*. December 2007:287-290.

In 1993, the U.S. Food and Drug Administration (FDA) approved Cognex (tacrine) as the first drug to treat Alzheimer's disease. Cognex inhibits the breakdown of the enzyme acetylcholinesterase (AChE) and the neurotransmitter acetylcholine (ACh), a key factor in stimulatory messaging in both the peripheral and central nervous systems. Aricept® (donepezil hydrochloride), a newer drug approved by the FDA to treat Alzheimer's disease, also is an AChE inhibitor.

Jim Duke, owner, founder, and executive director of the Green Farmacy Garden, in Fulton, Maryland, and an emeritus member of the American Botanical Council Board of Trustees, writes about the herb rosemary (*Rosmarinus officinalis*) and its phytochemical constituents reported to also prevent the breakdown of ACh.

According to the US Department of Agriculture database, rosemary, long known as the "herb of remembrance,"[1] has been reported to contain nearly a dozen aromatic compounds potentially active against AChE. Rosemary belongs to the mint family, Lamiaceae. In general, says Duke, the aromatic species in the mint family appear to be especially "well endowed with natural AChE antagonists as well as anticomplementary, anti-inflammatory, antioxidant, and cyclo-oxygenase-2 (COX-2)-inhibiting phytochemicals."

Recently, pharmaceutical companies have promoted synthetic COX-2 inhibitors for the off-label use of preventing Alzheimer's disease. Rosemary contains the following natural COX-2 inhibitors: apigenin, carvacrol, eugenol, oleanolic acid, thymol, and ursolic acid. "If a synthetic COX-2 inhibitor could prevent Alzheimer's disease, so could a natural COX-2 inhibitor," writes Duke.

In addition, rosemary contains nearly two dozen antioxidants and another dozen anti-inflammatory compounds. One of the strongest antioxidant substances in the herb is carnosic acid, which has even

greater reported antioxidant activity than the widely common synthetic antioxidants butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA).[2]

Rosemary also contains ferulic acid, which may be another preventive agent for Alzheimer's disease. An in vivo study found that mice who consumed ferulic acid and then were injected with beta-Amyloid peptide (Abeta), the major constituent of the senile plaques observed in the brains of Alzheimer's disease patients and thought to be central in the pathogenesis of the disease, retained more cognitive function than control mice. [3]

Duke also mentions ginkgo (*Ginkgo biloba*) as another possible herbal alternative to Aricept for the treatment of Alzheimer's disease. Ginkgolides have antioxidant, neuroprotective, and cholinergic activities relevant to the disease. The therapeutic efficacy of ginkgo extracts in Alzheimer's disease in placebo-controlled clinical trials has reportedly been similar to that of drugs such as tacrine or donepezil, and importantly, with minimal unwanted side effects.[4]

To conclude, Duke writes that "rosemary shampoo, rosemary tea (and aromatic mint teas), and rosemary in skin lotions and in bath water are safe and pleasant ways to reduce the risk of Alzheimer's disease." He also recommends cholinergic foods, such as "choline chowder" (for which he provides a recipe), followed by an anti-AChE herbal tea, also loaded with antioxidants and COX-2 inhibitors, to retard dementia.

—*Shari Henson*

References

[1]Duke JA. *The Green Pharmacy*. Emmaus, PA: Rodale Press; 1997.
[2]Doolaege EH, Raes K, Smet K, et al. Characterization of two unknown compounds in methanol extracts of rosemary oil. *J Agric Food Chem*. 2007;55:7283-7287.
[3]Yan JJ, Cho JY, Kim HS, et al. Protection against beta-amyloid peptide toxicity in vivo with long-term administration of ferulic acid. *Br J Pharmacol.* 2001 May;133(1):89-96.
[4]Kennedy DO, Scholey AB. The psychopharmacology of European herbs with cognition-enhancing properties. *Curr Pharm Des*. 2006;12:4613-4623.

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