

## Therapeutic value of *Ginkgo* in reducing symptoms of decline in mental function

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The Chinese tree *Ginkgo biloba* or "maiden hair tree" does not exist in the wild. However, it is extensively cultivated for the exploitation of the medicinal properties of its leaves. From these, a well defined extract designated "EGb 761" has been developed, which was commercialized initially as Tanakan, Tebonin and Rokin; a similar product, Kaveri, also exists. Although used in the treatment of various disease states, the major therapeutic applications for these products are in the treatment of "cerebral insufficiency", other cerebral disorders (including dementias), neurosensory problems and peripheral circulatory disturbances. De Feudis (1998) proposes four primary *concepts of action* to explain the pharmacotherapeutic benefits of EGb761, these are: vasoregulatory, cognition enhancing, stress-alleviating and gene-regulatory. These actions are realized through the principal active ingredients: flavonoids and the terpenoids Ginkgolides and Bilobide acting simultaneously in concert, combination and synergy, so-called *poly-valent action* (De Feudis 1998).

In their review of forty clinical studies involving *Ginkgo*, Kleijnen & Knipschild (1992) propose that

'cerebral insufficiency' comprises twelve different symptoms, all of which are manifest in the elderly and may be corrected by *Ginkgo*. Similarly, *Ginkgo* may have beneficial effects in improving cognitive function in dementing subjects, resolving acute hearing loss, improving memory and counteracting cerebral oedema.

In current studies in our laboratories, we are investigating the putative benefits of EGb 761 on embryonic rat nigral and striatal cells with a view to therapy in Parkinson's and Huntington's diseases. We are also studying the potential for selective enhancement of cognition by EGb 761, using the CANTAB system of cognitive assessment, to investigate the 'parallel processor' model in human intelligence.

De Feudis, F.V. (1998) *Ginkgo biloba* extract (EGb 761): From chemistry to the clinic. Publ. Ullstein Med. Weisbaden, Germany.

Kleijnen, J., Knipschild, P. (1992) *Ginkgo biloba* for cerebral insufficiency. Br J. Clin Pharmacol. 34: 352-358.