



## Nootropics

It is an established fact that an average adult human uses only a fraction of her total mental faculties. (No gender bias intended!) It would indeed be a scientific breakthrough to have natural and safe products that could help us utilize our mind to the fullest extent. Nootropics are substances that not only postpone or even reverse normal brain aging, but could even make "normal" young brains work better! The few of the main features of a Nootropic drug include enhanced learning, increased resistance to agents that tend to impair this process. It facilitates flow of information within the brain. It enhances general resistance of the brain particularly to physical and chemical injuries.

### **Pongamia glabra**

*Pongamia glabra* commonly known as Karanj is native of western ghats in India. Seeds of this medium-sized glabrous tree is mainly valued for the oil obtained from them which has many industrial and medicinal uses. It is traditionally used as febrifuge, tonic, in bronchitis whooping cough, skin diseases and arthritis.

In research conducted recently, the extract of *Pongamia glabra* seeds was tested for nootropic activity in an experimental model of Alzheimer's disease (created by ibotenic acid induced lesioning of the nuclear basalis magnocellularis). It reversed both, the cognitive deficits and the reduction in cholinergic markers after 2 weeks of treatment. Reversal of perturbed cholinergic function appears to be the possible mechanism.

### **Lawsonia alba**

Henna, botanically known as *Lawsonia alba* is a shrub cultivated in many in the warmer parts of India as a hedge plant as well as for the hair coloring agent derived from the leaves. Henna leaves are also used as a prophylactic against a number of skin diseases.

In recent preclinical studies the extract of *Lawsonia alba* (Henna) leaves showed significant nootropic effect on the elevated plus maze and passive shock avoidance paradigms. The extract also potentiated clonidine induced hypothermia and decreased lithium induced head twitches. This indicates that the nootropics potency of *Lawsonia alba* is mediated through its effect on 5HT and noradrenaline levels.

### **Albizzia lebeck**

Siris is a large, erect, deciduous, spreading tree common all over India. *Albizzia lebeck* is reported to have antiseptic, anti-dysenteric and anti-tubercular properties. The bark has acrid taste. It is recommended for bronchitis, leprosy, paralysis and helminth infections. The leaves are nutritious and palatable, and can be used as fodder.

The extract of Albizzia lebeck leaves on learning and memory was studied in albino mice using passive shock avoidance paradigm and the elevated plus maze. Significant improvement was observed in the retention ability of the normal and amnesic mice as compared to their respective controls. Studies also reported that the brain concentrations of GABA and dopamine were decreased, whereas the 5-HT level was increased. The data indicate the involvement of monoamine neurotransmitters in the nootropic action Albizzia lebeck. Yet another preclinical studies on cognitive behavior and anxiety in albino mice showed significant improvement in the retention ability of the normal and amnesic mice as compared to their respective controls.

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