

Pharmacognosy Phytochemistry and Clinical Applications of Medicinal Plant as Nervine Tonic

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Abstract: *There are many different types of traditional medicinal plants that are commonly used to enhance memory. One of these plants is Bacopa monnieri, Rhodiola rosea, Ginkgo biloba, with aniasomnifera, etc. The memory enhancing effects of these plants are exclusively attributed to their active botanical constituents. These ingredients are also called smart drugs. these are capable Passes through the blood-brain barrier. It also improves the cognitive capacity of the brain by acting on memory Much more attentive and focused. They have memory-enhancing properties to improve coordination between neurons and brain. Current work attempts to cover pharmacognosy, phytochemistry, and clinical applications. A traditional medicinal plant as a memory enhancer.*

Keywords: Medicinal Plants; Phytochemistry; Bacopa monnieri; Withaniasomnifera; Memory booster

I. INTRODUCTION

The use of herbal medicines in the manufacture of Ayurvedic medicines is well documented in the Indian system of traditional medicine. (ISTM) and other conventional medical systems. In India and the countries of the Indian subcontinent, most people live Villages and tribal areas are still dependent on ISTM. These systems have been in use for 5000 years and have aesthetics. value, greater patient compliance, and fewer side effects [1-13]. ISTM was developed by Guru-shishya parampara. It is mentioned in various Ayurvedic books such as Charak Samhita, Sushruta Samhita and Kapila Hridayam [14]. Memory is the brain's ability to encode, store, and recall information. Encoding refers to the first perception and registration of information. Storage is the long-term retention of encrypted information. Memory enhancers are known Under various names such as smart drugs, smart nutrition, cognitive enhancers, brain enhancers and nootropic herbs [15]. They are a class of drugs that improve people's impaired cognitive abilities, the functions and abilities of the brain.

Improving various aspects, such as memory, ultimately leads to well-maintained mental performance. Motivation, concentration and attention [16]. Oblivion is an important fact that reflects the breakdown of any of these The stage of memory is an example of memory impairment [17-18]. Memory enhancing herbs are used as dietary supplements to enhance many functions of the human brain. cognition related Information coming from the senses is transformed, reduced, refined, retrieved, is used with Urgent given the current COVID-19 situation and frequent complaints of amnesia You need to research memory booster herbs.

II. NATURAL MEMORY BOOSTERS

2.1 Nutrients

Amino acids phosphatidylserine found in soybeans, aspartic acid found in almonds, glutamic acid, pregnenolone Naturally occurring hormones are examples of natural supplements that can enhance memory. It is believed to increase oxygen circulation to the brain, block free radicals, and promote nerve growth [21-22].

2.2 Food

Proper nutrition helps keep your brain healthy. broccoli, cabbage, Some researchers recommend spinach and chard, as well as berries, plums, and cherry tomatoes. Or Omega-3 fatty acids found in fish such as salmon, herring and anchovies are also said to support memory [23].

2.3 Medicinal Plants

A set of herbs traditionally used in ISTM and other plant-based medical systems, including herbal medicines. The medical system, the Unani medical system, has produced positive results [24-26].

III. MEMORY BOOSTER PLANTS

There are number of plants reported in various literatures and in Ayurveda used for prophylaxis as supplement or in treatment of memory loss to enhance function of the brain.

3.1 Ginkgo Biloba

3.1.1. Description

Ginkgo biloba (Ginkgoaceae), with common names such as ginkgo biloba, kew tree, ginkgo biloba, ginkgo biloba, fossil tree Ginkgo biloba, Salisbriadianthifolia, Ginkgo biloba tree (Figure 1). It was part of Traditional Chinese and Japanese. Medicine for centuries. Ginkgo trees regenerate in about 20 years and continue to regenerate for most of that time. 1000 years old. The tree has also proven to be highly resistant to environmental pollution and some pathogens. The medicinal use of the leaves is of relatively recent origin and, by comparison, more common in Western herbal medicine culinary and two medicinal uses of the seeds (ovules), probably through its extensive oriental herbal traditions Until 2800 BC. (Fig. 1) [27-28].

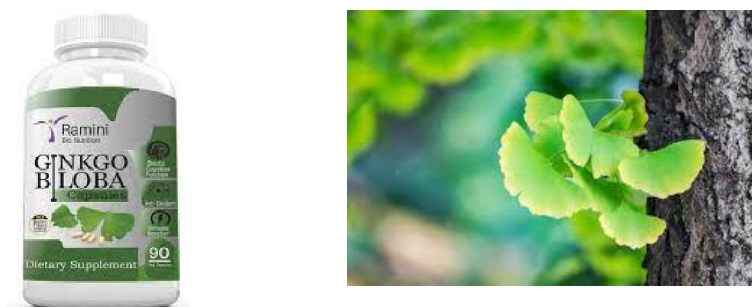


Figure 1: Ginkgo biloba and marketed product

3.1.2 Chemical Composition

G. biloba mainly contains terpenoids, flavonoids, biflavonoids, organic acids, polyprenols and many other components. In this bilobalide and ginkgolide. It can be classified into five forms (A, B, C, J, and M), all of which share the same molecular structure. Different scaffolds, but different numbers and geometrical positions of hydroxyl functional groups with pharmacological effects. Neuroprotective activity. It also contains flavonoids that are responsible for its memory-enhancing properties (Fig. 2) [29].

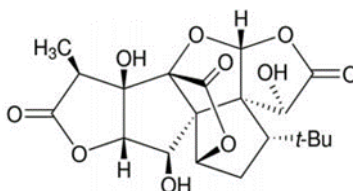


Figure 2: Chemical Structure of Ginkgolide B.

3.1.3. Used

Ginkgo biloba is commonly known as a brain herb or brain supplement because it helps strengthen the brain. performance. Helps improve and improve memory and thinking in healthy young and middle-aged people Concentration, focus, and thinking capacity of each consuming individual. The dose that works best is 240 mg/day [30].

3.2. Acorus Calamus

3.2.1. Description

Latin name for *A. calamus* Linn. Commonly called 'Sweet Flag' (Fig. 3), it is a member of the Araceae family. that is. Semi-aquatic perennial aromatic herb having creeping rhizomes, sword-shaped leaves and spadix inflorescences. This The species are wild or cultivated throughout Himalayan India (Fig. 3) [31].



Figure 3: Acorus calamus and powder.

3.2.2. Chemical Composition

The most important plant constituents of *A. calamus* are phenylpropanoids, sesquiterpenes, monoterpenes, steroids and flavones.(Figure 1). Xanthone glycosides and triterpenoid saponins are primarily involved in all therapeutic activities(Photo 4) [32]

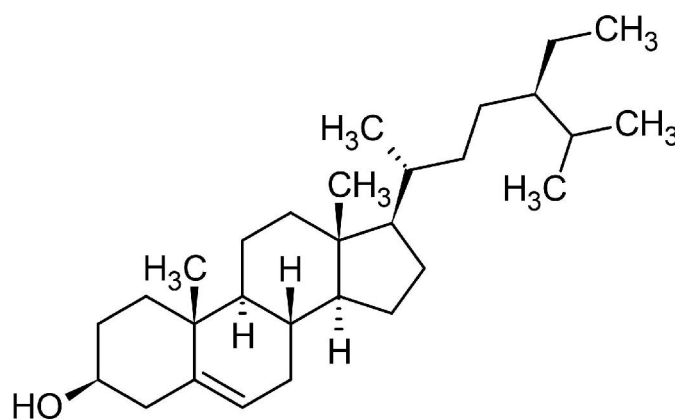


Figure 4: Chemical Structure of β Sitosterol.

3.2.3. Used

A. calamus rhizomes are used for amnesia and in combination with other drugs such as: *Centella asiatica*, *B. monnieri*, *Rauwolfia serpentina* used as memory enhancers. Improving the learning ability of *A. calamus* It is also known for its ability to improve memory. It has also shown memory-facilitating activity [33-34].

3.3. Rhodiola Rosea

3.3.1. Description

Rhodiola rosea is a perennial flowering plant in the Crassulaceae family (Fig. 5). Also called golden root. Arctic root (Figure 5). Can grow and breed naturally in the wild arctic regions of Europe, Asia and North America as a ground cover. The flowers have four sepals and four petals and are yellow to greenish-yellow, sometimes with red tips. Blooms in summer (Fig. 5) [35].



Figure 5: Rhodiola rosea and marketed product.

3.3.2. Chemical Composition

R. rosea contains rosin, rosarin, salidroside, flavonoids, 12 amino acids, 20 minerals, multivitamins, and tannins (Fig. 6). Rhodiola's antioxidant properties make it particularly effective in fighting aging [36].

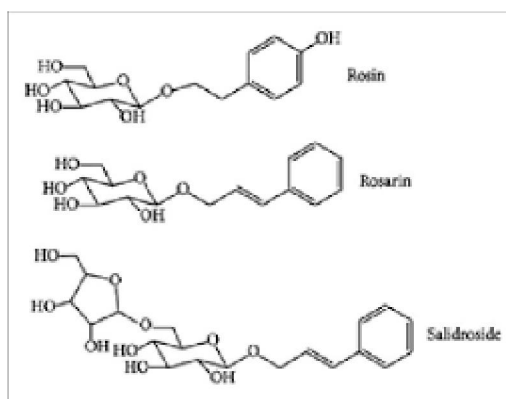


Figure 6: Chemical Structure of Rosin, Rosarin, Salidroside.

3.3.3 Used

Studies on R. rosea have shown it to improve memory and concentration over the long term. It increases the bioelectrical activity of the brain, improving memory and brain energy. In one study Standardized Extracts Showed Significant Improvements in Physical Fitness, Psychomotor Function, and Mental Health performance and general well-being. Subjects who received R. Rosea extract also reported a statistically significant reduction in mental fatigue, improved sleep patterns, reduced need for sleep, improved mood stability and motivation study [37]

3.3.3 Celastrus paniculatus

3.4.1. Description

Celastrus paniculatus is commonly known as the black oil plant. It is a climbing tree and an intelligence tree (Fig. 1). belongs to the family of the Simarubaceae family. The plant grows throughout India at altitudes up to 1800 m. paniculatus is a deciduous plant. Grape vine with a trunk diameter of up to 10 cm and a length of 6 m. Small, elongated lenticle. The leaves are simple, broadly ovate, oblong or elliptical with serrated margins. Or The seeds contain fatty acids and alkaloids that have sedative and antidepressant properties (Fig. 7) [38].



Figure 7: Celastropaniculatus and marketed product.

3.4.2 Chemical constituents

The seeds yield brownish-yellow oil 52.2% with an unpleasant taste. This oil is reported to contain alkaloids like pristimerin, glycosides, proteins & amino acids, phenolic compounds, tannins, fixed oil, carbohydrates, phenolic compounds, flavonoids, and saponins are present in only aqueous extract while Sterols and triterpenoids are present in aqueous and ethanolic extracts (Fig.8)[39].

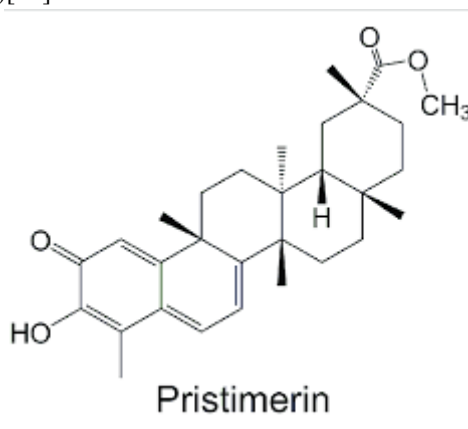


Figure 8: Chemical Structure of pristimerin.

3.4.3.Used

Celastropaniculatus reportedly showed excellent results in treating mental depression and speeding up the depression process. Learning and memory in laboratory animals. There were also excellent results in treating panic attacks without sides effect. An experimental study examined the effects of Celastrus oil on learning and memory in a two-compartment passive Avoidance tasks studied in rats. A significant improvement in retention capacity was observed in drug-treated rats compared to saline-treated controls. These studies clearly demonstrate that Celastrus oil works directly. Supports learning and memory [40].

Physical Activity

Challenging your brain with simple exercises can also boost memory, according to some scientists. Try playing Start your morning with a crossword puzzle or sudoku, read the daily newspaper, or attend a class on an unfamiliar activity or topic. Alone or in combination, these natural memory enhancers can stem, and in some cases even initiate, the tide of memory loss. Small back [41].

Crude Drug Analysis

Formulations containing part or all of the isolated botanical extracts or medicinal products are routinely analyzed quality control technology. Quality control techniques include high-performance thin-layer chromatography, liquid chromatography, ultraviolet spectrophotometry, gas chromatography, etc. [42-45]

IV. CONCLUSION

Thus, these medicinal plants are effective in the treatment of disorders related to memory loss. In addition, it is advised that the quality of good lifestyle will be ensured with appropriate nootropic herbal extract treatment to heal the cognitive conditions followed with proper diet, exercise, and mindfulness to support all along.

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