

Bacopa monnieri

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Introduction

The World Health Organization has defined traditional medicine as comprising therapeutic practices that have been in existence for hundreds of years. The traditional preparations comprise medicinal plants, minerals and organic matter. Herbal drugs constitute only those traditional medicines that primarily use medicinal plant preparations for therapy. Ayurvedic medicine is essentially promotive and preventive in therapeutic approach (Usha *et al.*, 2007).

Medicinal plants are natural sources, yielding valuable herbal products, which are often used in the treatment of various ailments (Sudhakar *et al.*, 2007). Medicinal plants have been traditionally used in the treatment of several human diseases and their pharmacological and therapeutic properties have been attributed to different chemical constituents isolated from their crude extracts. Of particular importance, chemical constituents with antioxidant activity can be found at high concentrations in plants and can be responsible for their preventive effects in various degenerative diseases, including cancer, neurological and cardiovascular diseases (Krishna *et al.*, 2010). Thus, the antioxidant properties of plants have a full range of perspective applications in human healthcare (Pereira *et al.*, 2009).

Bacopa monnieri

Bacopa monnieri (L.), commonly known as “Brahmi” is a member of the Family Scrophulariaceae. It is commonly found on the banks of rivers and lakes. *B. monnieri* has been placed second in a priority list of most important medicinal plants evaluated on the basis of medicinal importance, commercial value and potential for further research and development (Anonymous, 1997).

Scientific Classification

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Eudicots

Clade: Asterids

Order: Lamiales

Family: Plantaginaceae

Genus: Bacopa

Species: *B. monnieri*

Uses of *Bacopa monnieri*

It has been used for centuries in folklore and traditional systems of medicine as a memory enhancer, anti-inflammatory, analgesic, antipyretic, nerve tonic, cardiogenic, sedative and anti-epileptic agent (Russo and Borrelli 2005). Apart from this, it possesses hepatoprotective, antiulcer, broncho vasodilatory, anti-inflammatory (Channa *et al.*, 2006) and anti-helicobacter properties (Goel *et al.*, 2003).

The memory-enhancing effects of *B. monnieri* have been attributed to the active constituents, bacosides A and B. The memory-enhancing property of these bacosides has increased the international demand for this plant for its extensive use in several commercial preparations (Rahman *et al.*, 2002). The alcohol extract of *B. monnieri* has been shown to be a potent antioxidant, free radical scavenger and anti-lipid peroxidative agent (Bhattacharya *et al.*, 2000). It benefits the mind and spirit, and improves the intellect and consciousness, acts against the cognitive disorders of aging, assists in heightening mental acuity and supports the physiological processes involved in relaxation. Brahmi has curative potential towards neurodegenerative Alzheimer and Parkinson diseases (Garg *et al.*, 2009). In addition to its unique medicinal use, *B. monnieri* has also been linked to phytoremediation programmes for the removal of heavy metals such as cadmium and chromium (Shukla *et al.*, 2007).