GENESTRA BRANDS®

HMF Neuro Cognition

Probiotic formula with bacopa and carotenoids for brain and memory support

- Provides a combination of clinically researched probiotics, Bacognize™ Bacopa extract, lutein and zeaxanthin
- Formulated to support cognitive health, memory and brain function
- Helps maintain eyesight in conditions such as cataracts and age-related macular degeneration
- Helps improve macular pigment optical density
- Provides 25 billion CFU per daily dose

HMF Neuro Cognition was specifically developed to support cognitive health, memory and brain function. It offers BACOGNIZE™ Bacopa, a standardized extract of the *Bacopa monnieri* plant, which has a long history of traditional use in Ayurveda.[1] BACOGNIZE™ Bacopa has been clinically shown to support cognitive health and brain function, enhancing performance in a test measuring attention, freedom from distractibility and working memory.[2] As the brain and gut reciprocally communicate, this formula includes a blend of four proprietary probiotics that have been shown in clinical research to support aspects of cognitive health.[3-5] To further provide cognitive support, HMF Neuro Cognition offers the important carotenoid antioxidants lutein and zeaxanthin. Research demonstrates that these carotenoids help improve macular pigment optical density, maintain eyesight in conditions such as cataracts and age-related macular degeneration, and may be associated with improved cognitive function.[6,7]

EACH CAPSULE CONTAINS:

BACOGNIZE™ Bacopa (*Bacopa monnieri*) Aerial Parts Std. Extract (10-20:1) (12% Bacosides; 1.5-3 g Dried Equivalent)	150 mg
Lutein (from *Tagetes erecta* oleoresin)	5 mg
Zeaxanthin (from *Tagetes erecta* oleoresin)	1 mg
Probiotic Consortium	12.5 billion CFU
Lactobacillus acidophilus (CUL-60 & CUL-21)	9.5 billion CFU
Bifidobacterium animalis subsp. *lactis* (CUL-34) & *Bifidobacterium bifidum* (CUL-20)	3 billion CFU

Non-Medicinal Ingredients: Cellulose, hypromellose, sunflower lecithin, silica

Recommended Dose

Adults: Take 2 capsules daily with a meal containing oil, or as recommended by your healthcare practitioner. Take at least 2 to 3 hours before or after taking antibiotics. Use for a minimum of 4 weeks for memory-related beneficial effects.

Size
60 Vegetarian Capsules

Product Code
10389

NPN 80092267

Non GMO · Gluten Free · Soy Free · Dairy Free · No FOS · Vegan

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HMF Neuro Cognition

Scientific Rationale:

The brain is responsible for important abilities and processes, including memory, attention, reasoning, decision making, learning, motor skills and visualization.[1] Both its function and structure normally change over time, depending on genetics, health status, lifestyle and the environment.[1] While aging is inevitable, there are modifiable factors that can help support cognitive function across the lifespan.[1] For example, maintaining antioxidant status helps reduce oxidative damage, which normally accumulates in the aging brain.[2] Additionally, the brain and intestinal microflora reciprocally influence each other, suggesting that an optimal gut flora composition may contribute to proper cognitive function.[3] Research has found that age-related decreases in cognitive function normally occur in healthy individuals, beginning in their late 20s and extending through their lifetimes.[2]

Bacopa has been traditionally used in Ayurveda for memory enhancement for over 3,000 years.[4] In a recent meta-analysis of nine randomized, placebo-controlled trials, daily intake of 300 mg of bacopa for at least 12 weeks improved cognitive function, including measures of memory and attention.[4] Emerging evidence suggests that bacopa acts by promoting antioxidant defence, increasing cerebral blood flow and regulating neurotransmitter levels.[5]

Bacopa contains a wide variety of phytochemicals that support cognitive health, including bacosides.[5] BACOGNIZE™ is a proprietary, clinically researched bacopa extract standardized to total bacosides. Preclinical research has shown that this extract can bind to and regulate the activity of serotonin receptor 5HT1a, which plays an important role in neurochemical responses.[6,7] BACOGNIZE™ also contains flavonoids and polyphenols with antioxidant capacity found to be greater than acai, cocoa and curry powder, which may further contribute to its beneficial health effects.[6]

Randomized, double-blind, placebo-controlled trials have reported that BACOGNIZE™ improves cognitive function in both healthy students and older adults.[8,9] Daily supplementation with 300 mg of the extract for approximately 7-12 weeks significantly improved measures of cognitive function, including memory and attention.[8,9] As one trial involved the completion of cognitive tests four weeks after supplementation ended, the study's authors suggested that BACOGNIZE™ may exert a sustained, positive effect on brain function.[9]

Emerging research has also focused on a bidirectional connection between the gut and brain, termed the gut-brain axis.[10] While the brain affects the gastrointestinal tract through the modulation of intestinal motility and permeability; secretion of mucous, bicarbonate and acid; absorption of nutrients; and flow of blood, the gut can also impact brain function.[10] For example, gut bacteria have been shown to produce neurotransmitters such as GABA, serotonin and acetylcholine, as well as neuroactive metabolites, including short-chain fatty acids (which can activate neurons and cross the blood-brain barrier).[10] In addition to these compounds, the gut and brain communicate through the vagus nerve, which connects the brain stem to the gastrointestinal tract.[10]

HMF Neuro Cognition includes the HMF **probiotic** consortium, which has been shown across *in vitro*, animal and human clinical trials to support aspects of cognitive health.[11-14] Preclinical research suggests that this probiotic consortium may act by regulating the activity of antioxidants and the level of metabolites in the brain.[11,12]

As the eye is an extension of the central nervous system, a growing number of studies have investigated the relationship between cognitive function and the carotenoids lutein and zeaxanthin.[15,16] In addition to their presence in the lens and macula of the retina, **lutein** and **zeaxanthin** have been found in various areas of the brain.[15] Research has reported that higher levels of these carotenoids are positively associated with improved cognitive function across a range of ages.[15,17-18] Although their mechanism of action has not been confirmed, preliminary evidence suggests they may provide support to the brain by mediating antioxidant activity, cytokine balance or neuronal processing (such as promoting cell-to-cell communication and structural stability).[16]

Age-related structural and functional changes affect both eyesight and brain function.[19] Lutein and zeaxanthin provide important protection to the eyes by reducing oxidative damage resulting from metabolic activity and light exposure (which can accumulate over time).[20] They directly scavenge free radicals and decrease light-induced peroxidation in membrane phospholipids, while absorbing and attenuating the damaging effects of high-energy blue light before it can reach retinal cells.[21] Lutein and zeaxanthin further help to support eyesight in conditions such as cataracts and age-related macular degeneration, reduce the risk of developing cataracts, and improve macular pigment optical density (MPOD). A higher MPOD has also been associated with cognitive health in adults, further suggesting a supportive role of these carotenoids in the brain.[16,22-24]

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