LEMON BALM: THE SMART WAY TO COGNITIVE HEALTH

being smart is the only way to keep up in our performance-based society!

Approximately 32% of consumers take dietary supplements or functional foods to improve brain function

LEMON BALM EXTRACT FOR COGNITIVE PERFORMANCE

Lemon balm, Melissa officinalis, is an annual edible herb that’s native to Europe. Its traditional medical applications focus on the essential oil components of the plant and on rosmarinic acid for relaxation properties. Studies showed that the traditional relaxing effects may be linked to elevated levels of the neurotransmitter GABA (γ-aminobutyric acid) by inhibiting GABA-transaminase (GABA-T), an enzyme that degrades GABA. Rosmarinic acid is thought to be responsible for this effect. In addition, it is also known that rosmarinic acid is able to inhibit the enzyme, acetylcholinesterase, which degrades the neurotransmitter acetylcholine. Studies have shown that age-related cognitive deficits and Alzheimer’s disease may be related to low acetylcholine levels.

Modern research has shown that selected Melissa officinalis varieties and breeding lines support new applications for lemon balm on cognitive performance based on cholinergic receptor binding properties. It seems as if the traditional use of lemon balm for relaxation is supported by all varieties; however, the beneficial effects on cognitive performance could not be confirmed for all of the lemon balm varieties investigated. Published human studies report that extracts with the same phytochemical specification obtained from different varieties did not show the same beneficial cognitive effects. This indicates that the well-established method of standardizing lemon balm extracts based on rosmarinic acid as the main active compound may not represent the whole range of active principles, particularly not those contributing to cognitive performance.
Conclusions
Bluenesse is an exclusive Melissa officinalis extract developed to support cognitive performance and mental health, as well as reduce the long-term negative physiological effects of stress for overall health. It uniquely combines calming and alertness-increasing effects, providing the ability to deal with complex situations, from a high workload to family issues, in a cool-headed, focused and structured way. Bluenesse is a high quality, sustainable, natural food ingredient, which is IP protected and approved for use in dietary supplements and foods in Europe and the US. Bluenesse has a pleasant taste and is water soluble. It can be used in food supplements as well as in foods and beverages.

For More Information
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References

Table I: Summary of Bluenesse Mental Health Effects

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<th>Effects of most lemon balm extracts</th>
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<tr>
<td>Anxiolytic &amp; calming effects</td>
<td>• alertness/concentration/mental focus</td>
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<td>γ-aminobutyric acid (GABA)</td>
<td>• working memory</td>
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<td>GABA transaminase inhibition by rosmarinic acid</td>
<td>• a calm, positive mood</td>
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<tr>
<td>Amelioration of age-related cognitive deficit</td>
<td>• ability to cope of occasional stress</td>
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<tr>
<td>ACh esterase inhibition by rosmarinic acid</td>
<td>• improvement of age-related cognitive impairment.</td>
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Figure 1: Bluenesse effects on mental health

Vital Solutions’ research and extensive know-how in natural products has enabled them to identify a special lemon balm breeding line that supports cognitive effects, particularly alertness and memory. To confirm these beneficial cognitive effects, all critical process points, from the selection of the raw material to the release of a batch, are controlled by an innovative bioassay guided technology as well as by traditional phytochemical parameters. The resulting lemon balm extract is marketed under the brand name Bluenesse. Bluenesse is standardized according to muscarinic receptor binding activity and rosmarinic acid content, introducing a new dimension in quality control and bridging the gap between a traditional European herb and innovative bioassay guided technologies. Bluenesse is an exclusive Melissa officinalis extract developed to support cognitive performance and mental health. Figure 1 summarizes the different mode of actions of Bluenesse on mental health.

Human Study Results
Bluenesse has been scientifically substantiated with human study results. The main human study was conducted by Prof. Scholey of the Brain Science Institute, Swinburne University, Australia. Prof. Scholey is a well-known expert on brain health and has focused his research on lemon balm. The aim of the study was to evaluate the effects of the lemon balm extract on cognitive performance under mild stress, comparable with a general multitasking environment (which most consumers experience every day). The investigation included parameters to evaluate cognitive performance, physiological reaction of stress and mood. It was a double-blind, randomized, placebo-controlled, balanced-crossover, monocentric study involving 25 healthy people. The lemon balm extract was tested in concentrations of 300 and 600 mg. Study results demonstrated that, one hour after consuming a 300 mg dosage, significant beneficial effects on alertness, working memory and word recall, cortisol reduction as a marker for stress and reduced anxiety could be detected. The effects were still measurable 3 hours after intake (Table I).