



Nootropic-Moodtropic

Data Sheet 2024

Clarity, focus, memory, and the ability to learn new things are the goals of all products that are labeled as Nootropics. According to Wikipedia, Nootropics are drugs, supplements, and other substances that are **claimed** to improve cognitive function, particularly executive functions, attention, memory, creativity, or motivation, in **healthy individuals**. Over 10 years ago, the Millennium started a veterans' project addressing foggy memory or cognitive dysfunction secondary to blast trauma (IEDs and ordnances). What developed, over six clinical years, is **B is for Brain**[®], a nootropic that delivers. Using our proprietary nanoliposomal delivery technology, the production gets into your system and not wasted down the drain.

Since officially launching B is for Brain[®] in 2019, we have over 7000 individuals that are taking it as a component of Brain Rescue 1[®] or Brain Rescue 3[®]. Presently, B is for Brain[®] and is being used daily by more than 7000 individuals per month. During this time frame clients have been reporting better sleep, less stress, more adaptable to challenges, and greater emotional stability and that is where Moodtropic comes into play.

Composition and explanation of actions (reference articles below)

PQQ - (Pyrroloquinoline quinone) is a compound known to influence multiple cellular pathways, including the production of nerve growth factor (NGF). By protecting neurons and stimulating nerve growth in the brain, PQQ also supports cognitive performance, including memory and attention. Additional benefits of PQQ are its ability to remove free radicals and lower oxidative stress, increase production of ATP, and to stimulate the production of Mitochondria.

Vitamin CoQ10 – (Ubiquinone) It is part of the electron transport chain and participates in aerobic cellular respiration, which generates energy in the form of ATP. Ninety-five percent of the human body's energy is generated this way. The brain, heart, liver, and kidneys have the highest energy requirements and therefore, the highest concentrations of Co-Q10. The more ATP produced the better and clearer are brain functions.

Vitamin B1 – (Thiamine) is important for production of neurotransmitters, memory, mental clarity, cognition and steady gait. Vitamin B1 is important for production of energy from carbohydrates. Vitamin B1 can treat symptoms associated with Wernicke-Korsakoff syndrome and reduce oxidative stress.

Vitamin B2 – (Riboflavin) deficiency is associated with neurodegeneration, peripheral neuropathy, loss of thyroid (T4) metabolism with personality changes. B2 might also protect the eyes from Cataracts.

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Vitamin B5 – (Pantothenic acid) functions as the required precursor of coenzyme A (CoA), through which it plays key roles in multiple biological processes, including many that regulate carbohydrate, lipid, protein, and nucleic acid metabolism. Acetyl-CoA is necessary for synthesis of the complex fatty-acyl chains of myelin, and of the neurotransmitter acetyl- choline. Brain functioning.

Vitamin B12 – (Cobalamin) deficiency express itself by a wide variety of hematological, neurological, psychiatric, gastrointestinal, and skin disorders. Nervous system disorders, such as brain atrophy, myelopathy, and neuropathy, are often the earliest and, in some cases, the only clinical symptoms of vitamin B12 deficiency. Ongoing research suggested that the imbalance of cytokines and growth factors may be essential to the pathogenesis of the white matter lesions and thus neuropathy due to cobalamin deficiency.

Reference Articles.

Pyrrroloquinoline-quinone (PQQ)

1. Pyrrroloquinoline-quinone and its versatile roles in biological processes. *J Biosciences* 2012; 37:313–25. Misra HS, Rajpurohit YS, Khairnar NP. (2012)
2. Naveed, M. (2016). The Life History of Pyrrroloquinoline Quinone (PQQ): A Versatile Molecule with Novel Impacts on Living Systems. *International Journal of Molecular Biology*, 1(1). <https://doi.org/10.15406/ijmboa.2016.01.00005>
3. Harris, C. B., Chowanadisai, W., Mishchuk, D. O., Satre, M. A., Slupsky, C. M., & Rucker, R. B. (2013). Dietary pyrrroloquinoline quinone (PQQ) alters indicators of inflammation and mitochondrial-related metabolism in human subjects. *Journal of Nutritional Biochemistry*, 24(12), 2076–2084. <https://doi.org/10.1016/j.jnutbio.2013.07.008>
4. Downey, B. M. (2007). Three-Step Strategy to Reverse Mitochondrial Aging Why We Need Mitochondria. *The Mitochondrial Theory of Aging*. [[LEM Link](#)]
5. Cheng, Q., Chen, J., Guo, H., Lu, J. li, Zhou, J., Guo, X. yu, Shi, Y., Zhang, Y., Yu, S., Zhang, Q., & Ding, F. (2021). Pyrrroloquinoline quinone promotes mitochondrial biogenesis in rotenone-induced **Parkinson's disease** model via AMPK activation. *Acta Pharmacologica Sinica*, 42(5), 665–678. <https://doi.org/10.1038/s41401-020-0487-2>
6. Stimulation of nerve growth factor production by pyrrroloquinoline quinone and its derivatives in vitro and in vivo. *Bioscience Biotechnol Biochem*. 1993;57(7):1231-3. Yamaguchi K, Sasano A, Urakami T, Tsuji T, et al.
7. Pyrrroloquinoline quinone (PQQ) stimulates mitochondrial biogenesis through cAMP response element-binding protein phosphorylation and increased PGC-1alpha expression. *J Biol Chem*; 285:142–52. Chowanadisai W, Bauerly KA, Tchapanian E, Wong A, Cortopassi GA, Rucker RB. (2010)
8. Pyrrroloquinoline quinone modulates mitochondrial quantity and function in mice. *J Nutrition*;136: 390–6. Stites T, Storms D, Bauerly K, Mah J, Harris C, Fascetti A, et al. (2006)

Coenzyme Q10 (Co-Q10)

1. Coenzyme Q10 Supplementation in Aging and Disease. *Frontiers in Physiology*, 9:44. Juan D. Hernández-Camacho, et al. Centro Andaluz de Biología del Desarrollo and CIBERER, Instituto de Salud Carlos III, Universidad Pablo de Olavide-CSIC-JA, Sevilla, Spain, Translational Gerontology Branch, National Institute on Aging, National Institutes of Health, Baltimore, MD, USA. (2018)
2. Effects of coenzyme Q10 supplementation on inflammatory cytokines (TNF- alpha, IL-6) and oxidative stress in rheumatoid arthritis patients: a randomized controlled trial. *Arch. Med. Res.* 46, 527–533. Abdollahzad, H., Aghdashi, M. A., Asghari Jafarabadi, M., and Alipour, B. (2016)
3. Reduced cardiovascular mortality 10 years after supplementation with selenium and coenzyme Q10 for four years: follow-up results of a prospective randomized double- blind placebo-controlled trial in elderly citizens. *PLoS ONE* 10:e0141641. Alehagen, U., Aaseth, J., and Johansson, P. (2015).
4. Coenzyme Q10 as a possible treatment for neurodegenerative diseases. *Free Radical. Research*. 36, 455–460. Beal, M. F. (2002).
5. Mitochondrial biology and neurological diseases. *Current Neuropharmacology*. 14, 143–154. Arun, S., Liu, L., and Donmez, G. (2016).

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B Vitamins

1. B vitamins and the aging brain. Nutrition Reviews® Vol. 68: S112–S118. Jacob Selhub, Aron Troen, and Irwin H Rosenberg. J Selhub, A Troen, and IH Rosenberg are with the Jean Mayer US Dept of Agriculture Human Nutrition Research Center on Aging at Tufts University, Boston, MA, USA. (2010)
2. The effects of vitamin B in depression. Current Medicinal Chemistry. Vol 23:28. Kathleen Mikkelsen, Lily Stojanovska, Vasso Apostolopoulos, Centre for Chronic Disease, College of Health and Biomedicine, Victoria University, Melbourne, VIC Australia. (2016)
3. Relations of vitamin B-12, vitamin B-6, folate, and homocysteine to cognitive performance in the Normative Aging Study. Am J Clin Nutr; 63:306-314. Riggs, K M Spiro, A Tucker, K L Rush, D. Jean Mayer US Department of Agriculture Human Nutrition Research Center on Aging at Tufts University, Boston, and the Normative Aging Study, Department of Veterans Affairs, Outpatient Clinic, Boston. USDA Human Nutrition Research Center on Aging at Tufts University, Boston, MA 02111. (1996)

Thiamine (B1)

1. Molecular Mechanisms of Thiamine Utilization. Current Molecular Medicine 2001, 1, 197-207. Charles K. Singleton* and Peter R. Martin 197 Departments of Molecular Biology and Psychiatry, Vanderbilt University, Box 1820, Station B, Nashville TN 37235; USA
2. Acute encephalopathy due to thiamine deficiency in a chronic hemodialyzed patient: a case report. Clin Nephrology. 1991;35(4):171–175. Descombes E, Dessibourg CA, Fellay G.
3. Interactions of oxidative stress with thiamine homeostasis promote neurodegeneration. Neurochemical Intern, 40:493–504. Gibson GE, Zhang H. 2002.

Riboflavin (B2)

1. Characterization of the antinociceptive and anti-inflammatory activities of riboflavin in different experimental models. Bertollo, C. M., Oliveira, A. C., Rocha, L. T., Costa, K. A., Nascimento, E. B., Coelho, M. M. Eur. J. Pharmacol. 547:184–191. (2006)
2. Riboflavin prophylaxis in pediatric and adolescent migraine. J. Headache Pain. 10:361-5. Condo, M., Posar, A., Arbizzani, A., Parmeggiani, A. (2009).
3. Effect of riboflavin or pyridoxine deficiency on inflammatory response. Indian J. Biochem. Biophys. 28: 481–484. Lakshmi, R., Lakshmi, A. V., Divan, P. V., Bamji, M. S. (1991).

Pantothenic Acid (B5)

1. Oxidative stress induced neurodegenerative diseases: the need for antioxidants that penetrate the blood brain barrier. Neuropharmacology. 2001;40:959. Sherki Y, Melamed E, Offen D.
2. Pantothenic acid and pantothenol increase biosynthesis of glutathione by boosting cell energetics. FEBS Lett. 2004;569(1–3):169–72. Slyshenkov VS, Dymkowska D, Wojtczak L.

Cobalamin (B12)

1. The multi-faceted basis of vitamin B12 (cobalamin) neurotropism in adult central nervous system: Lessons learned from its deficiency. Prog. Neurobiology. 2009, 88, 203–220. Scalabrino, G.
2. Neuroenhancement with vitamin B12-underestimated neurological significance. Nutrients 2013, 5, 5031–5045. Gröber, U.; Kisters, K.; Schmidt, J.
3. Update on Vitamin B12 Deficiency. American Family Physician. Volume 83, Number 12.2011. Robert C. Langan, MD, and Kimberly J. Zawistoski, DO, St. Luke’s Hospital, Bethlehem, Pennsylvania
4. Vitamin B12 (cobalamin) and Parkinson’s disease. Clinical Practice 2012, 9, 353–356. Sadasivan, S.; Friedman, J.H.
5. Association of Vitamin B12 Deficiency with Fatigue and Depression after Lacunar Stroke. Plos One 1 January 2012 | Volume 7:1. Marjolein Huijts, et al, Dept of Neurology, Maastricht University Medical Centre, Maastricht, The Netherlands, Dept of Psychiatry and Psychology, Maastricht University Medical Centre, The Netherlands, School for Mental Health and Neuroscience, The Netherlands, Cardiovascular Research Institute Maastricht, Maastricht University, The Netherlands

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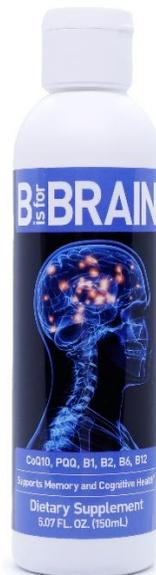
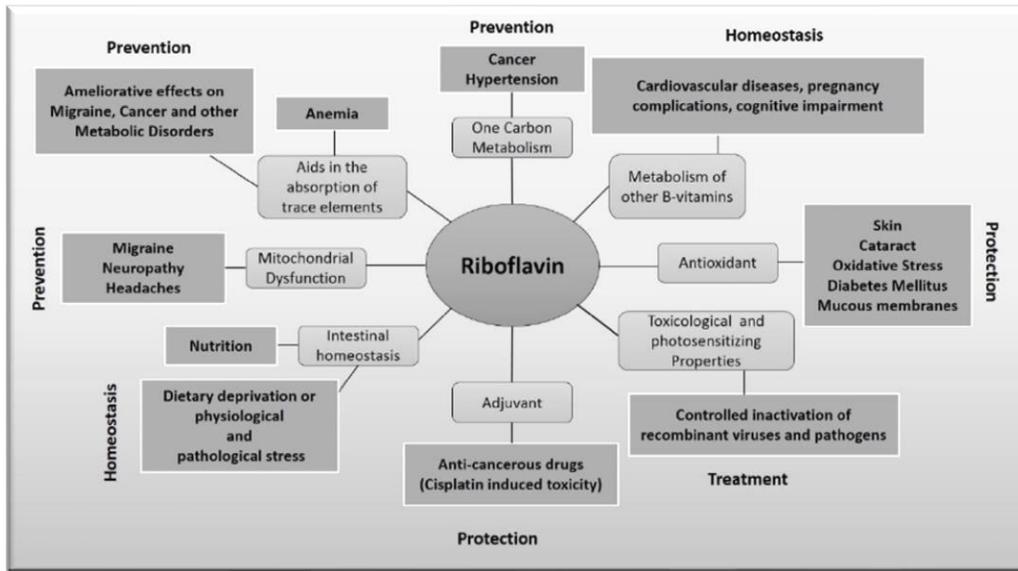
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6. Cobalamin Deficiency: Effect on Homeostasis of Cultured Human Astrocytes
 Cells 2019, 8, 1505. Zuzanna Rzepka et al. Department of Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences in Sosnowiec, Medical University of Silesia, Katowice, Poland, Jagiellonska 4, 41-200 Sosnowiec, Poland;

Many functions of the B Vitamins.

Vitamin B2. An example of the multiple systems that this one Vitamin provides protection and recovery.



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