

MEMORY

GenBioChem® Proclinic Memory helps to enhance cognitive function and memory.
NPN: 80032186



Standardized using GenBioChem® Triple Fingerprinting Technology™

Our Unique Platform Technology

Our scientific and medical team have developed a breakthrough proprietary technology platform, GenBioChem® Triple Fingerprinting Technology™. Several cutting-edge analytic and biomedical technologies are involved in this technology platform.

Our GenBioChem® Triple Fingerprinting Technology™ ensures quality, authenticity and purity throughout our entire production cycle from lab to shelf.

Our Founder and Chief Scientist

Dr. Jacqueline Shan is an award-winning international scientist and business leader and the creator of the #1 selling cold and flu product in Canada, COLD-fX®. She leads a team of scientists and medical professionals in Canada and around the world to research and develop innovative biotechnologies and biomedical products.

Supplement Facts

Each capsule contains:

Medicinal Ingredients:

- 100 mg of a proprietary extract PBG-001 from the root of Panax quinquefolius (North American ginseng) containing 16.5% ginsenosides
- 60 mg of a standardized extract PBG-003 from the leaf of Ginkgo biloba containing 24.0% flavone glycosides and 6.0% total terpene lactones

Non-Medicinal Ingredients:

- Capsule (hypromellose, titanium dioxide), excipients (cellulose, magnesium stearate, silica, rice starch)

Effects:

Active ingredients have been shown to:

- Improve brain cell metabolism and activate neural mediators, enhance and maintain memory
- Protect the normal function of cell mitochondria and resist fatigue
- Maintain nerve cell antioxidant capacity and protect nerve cell damage
- Soothe cerebrovascular cells and improve cerebral blood circulation
- Have the auxiliary effect of lowering blood sugar

Recommended Dose:

- Adults: Take 1 capsule twice per day. For best results, take in the morning or during the day if feeling fatigued. Avoid taking at bedtime.
- Consult a healthcare practitioner for use beyond 6 weeks.

Cautions and Warnings:

- Consult a healthcare practitioner prior to use if you are taking other medications such as digoxin or if you suffer from hypertension or cardiovascular or liver diseases.
- Not recommended for individuals with impaired liver or renal function.
- Use as indicated or as directed by a health care practitioner.
- Do not use if you are pregnant or breastfeeding.

Target Populations (ages 12 years and older):

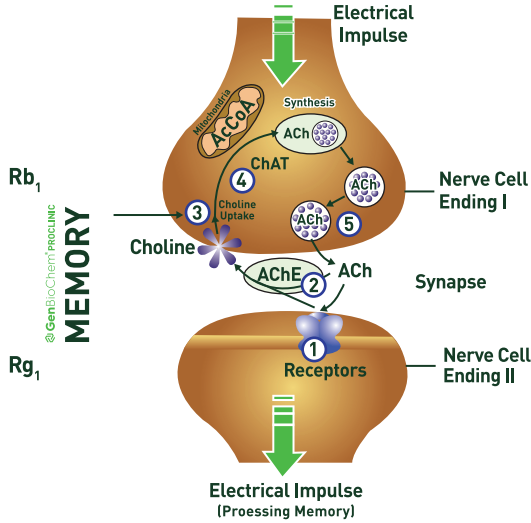
- People with age-related memory loss
- Students looking to improve cognition
- People looking to slow the effects of neurodegeneration
- People looking to improve focus and slow mental responses

Our Company

GenBioChem® Proclinic Memory is developed and manufactured by PBG BioPharma Inc. PBG BioPharma is a vertically integrated biopharmaceutical Canadian company. We are committed to becoming a world leader in research, development and manufacturing of evidence-based natural health products and therapeutics using our proprietary GenBioChem® Triple Fingerprinting Technology™.

1. GenBioChem® Proclinc Memory enhances uptake of choline by nerve endings in the brain resulting in significant memory improvement.

The level of acetylcholine in the brain is determined by 1) the synthesis of ACh inside the nerve ends using choline as the substrate; 2) the release of ACh from the nerve ending to interact with nerve cells by generating an intracellular signaling cascade; 3) the breakdown of ACh to choline and other chemicals by enzyme reaction outside the nerve cells; 4) the recycle of choline to the nerve endings through re-uptake of choline by the nerve endings. GenBioChem® Proclinc Memory and its active components, ginsenosides (Rb1, Rg1, etc) increase the re-uptake of choline, therefore increasing the level of ACh.



Cholinergic Neurotransmission

Step 1 : ACh binds and interacts with nerve cell membrane and generates biochemical and electric events associated with learning and memory.

Step 2 : ACh is degraded by enzyme AChE.

Step 3 : Choline is transported or pumped by nerve ending through membrane transporter.

Step 4 : Using choline as the substrate, the nerve cell synthesizes more ACh by the enzymes AcCoA and ChAT.

Step 5 : ACh is released to the synaptic cleft and then interacts with the membrane receptor and degraded by AChE (back to process 1).

*GenBioChem® Proclinc Memory increases the choline uptake by the nerve ending (step 3). As a result the content of ACh is increased.

Definitions:

Acetylcholine (ACh): A neurotransmitter relating to memory and learning.

Synapse: Nerve cell junction formed by 2 nerve cell endings. The space between two nerve endings is called the "synaptic cleft".

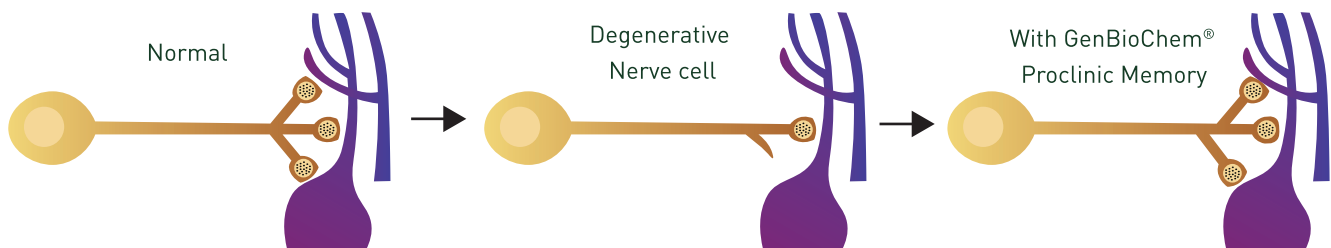
AcCoA and ChAT: The co-enzyme in the mitochondria and the enzyme responsible for the synthesis of ACh.

Choline: A substrate for the synthesis of ACh.

Electrical Impulse: Electrical signals generated through the cell membrane and transmitted from one nerve cell to another through neurotransmitters such as ACh.

2. GenBioChem® Proclinc Memory stimulates neurite growth in cultured nerve cells and has been shown to exhibit nerve growth factor-like effects, i.e., to re-establish the lost synaptic contacts between nerve cells.

GenBioChem® Proclinc Memory increases neurite outgrowth, therefore increase the number of synapses.



References

1. Benishin, C.G., H.J. Liu, L.C.H. Wang & P.K.T. Pang (1989). Ginsenosides Rb1 and Rg1 increase central nervous system cholinergic metabolism. In: S.Shibata, X. Ohtsuka, and H. Saito, eds., *Recent advances in Ginseng studies*, Hirokawa Publishing Co., 139- 143.
2. Sloley, B.D., Shan, J., Greenshaw, A.J. and Pang, P.K.T. (1999). American ginseng extract reduces scopolamine- induced amnesia in a spatial learning task 24(5): 442- 452.
3. Shibata, S., Tanaka, O., Shoki, J., and Saito, H. (1985). *Chemistry and Pharmacology of Panax*. In: Economic and Medicinal Plant Research, Vol. 1, Academic Press, London, Pgs. 217-284.
4. Huang KC. (1993). *The Pharmacology of Chinese Herbs*. CRS Press.
5. Benishin, C.G. (1992). Actions of ginsenoside Rb1 on choline uptake in central cholinergic nerve endings. *Neurochem.Int.* 21: 1- 5.