

Attentin-3 sachet

Indication:

- ✓ ADHD
- ✓ Autism symptoms
- ✓ Memory disorders and Alzheimer's disease
- ✓ Vitamin B12 supply
- ✓ Mental disorders and depression
- ✓ Increase energy

Ingredients dosage:

- 40 mg of phosphatidylserine
- 60 mg of L-glutamine
- 500 micrograms of vitamin B12



Phosphatidylserine:

- Effects on neuroplasticity
- Reduction of free radicals
- Increases myelination
- Increases production of acetylcholine
- Facilitating the function of neurotransmitters

L-glutamine:

- Stored in synaptic vesicles
- brain fuel
- Prevention of apoptosis
- The structure of receptors NMDA and GABA
- Effective in reducing depression and bipolar symptoms
- Antidote of Ammonia

Vitamin B12:

- Cell signaling co-factor
- Effects on mood improvement
- prevents in memory impairment
- A protective role for the myelin

Introduction

Attentin-3 represents an association of three substances known for their favorable action on nervous tissue metabolism. This medicine acts as a stimulant and nutrient in central nervous system (CNS) for improving neural cell signaling which is related to ADHD, memory impairment, attention, learning, autism, and overall it has lots of benefits in brain function.

Ingredients properties

Phosphatidylserine:

Structure: Phosphatidylserine is composed of two fatty acid chains, a glycerol backbone, a phosphate group, and a serine molecule. The fatty acid chains can vary in length and saturation, contributing to the fluidity and stability of the cell membrane. It is present in various cell types, but it is particularly abundant in brain cells and nerve tissues.

Neurotransmitter release: Phosphatidylserine is involved in the release of neurotransmitters in the brain. It acts as a cofactor for enzymes that synthesize and package neurotransmitters into vesicles for release during neuronal communication. Phosphatidylserine availability is important for maintaining proper neurotransmitter levels and facilitating efficient neuronal signaling.

Neuroinflammation: Phosphatidylserine has anti-inflammatory properties in the CNS. It can suppress the production and release of pro-inflammatory molecules, such as cytokines and chemokines, from activated immune cells in the brain. By reducing neuroinflammation, phosphatidylserine helps protect neurons from damage and maintain their proper functioning.

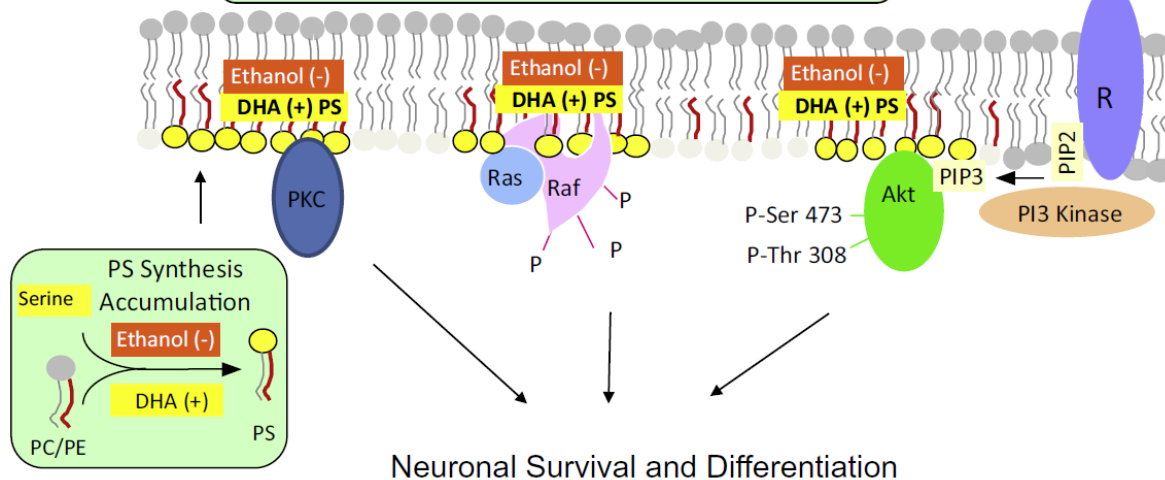
Myelin sheath formation: Phosphatidylserine is important for the formation and maintenance of myelin, a protective covering around nerve fibers that enhances the speed and efficiency of nerve impulse conduction. Myelin is primarily composed of lipids, including phosphatidylserine, and its integrity is crucial for proper neuronal communication.

Cognitive function and memory: Phosphatidylserine has been studied for its potential cognitive benefits. It is thought to support cognitive functions such as memory, attention, and learning. Some research suggests that phosphatidylserine supplementation may help improve memory performance, particularly in older individuals. It is believed to promote neuronal membrane integrity, enhance neurotransmitter release, and support communication between brain cells.

Age-related cognitive decline: As individuals age, the levels of phosphatidylserine in the brain naturally decline. This decrease in phosphatidylserine has been associated with age-related cognitive decline and memory impairment. Supplementing with phosphatidylserine has been suggested as a potential strategy to mitigate age-related cognitive decline and support cognitive health especially in older adults.

Mood and stress response: Phosphatidylserine may also have an impact on mood regulation and the stress response in the CNS. It is involved in the modulation of cortisol, a stress hormone released during stressful situations. By regulating cortisol levels, phosphatidylserine supplementation has been explored for its potential to reduce stress, improve mood, and support mental well-being. The CNS is susceptible to

Signaling Protein Translocation / Activation



the plasma membrane. Translocation is initiated by specific stimuli, for example, growth factor-dependent PIP3 generation from PIP2 by PI3 kinase in the case of Akt. Binding to the membrane occurs in part through an interaction of these proteins with PS present in anionic domains of the lipid bilayer, activating the signaling pathways leading to neuronal differentiation and survival. Also, DHA facilitates this mechanism by increasing PS production in neurons.

Neurotransmi

glutamate. Glutamate is an excitatory neurotransmitter involved in various cognitive functions, such as learning and memory. Glutamate is also converted into gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter that helps regulate neuronal activity.

Energy metabolism: Glutamine is involved in energy metabolism in the CNS. It can be metabolized by astrocytes to produce energy in the form of ATP. This energy supply is essential for maintaining neuronal function and supporting various cellular processes in the brain.

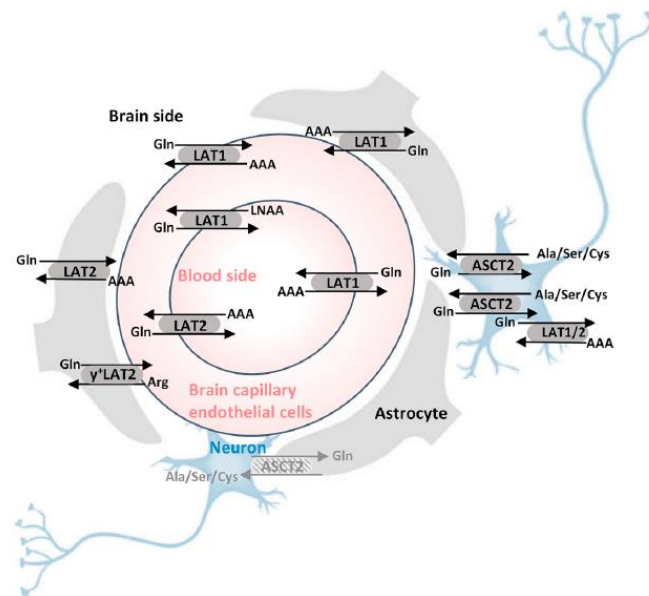
Neuroprotection: L-glutamine has been implicated in neuroprotection, which refers to mechanisms that help protect neurons from damage or degeneration. It has antioxidant properties and can help reduce oxidative stress in the CNS, which is associated with various neurodegenerative diseases. Additionally,

glutamine supports the maintenance and repair of the blood-brain barrier, which helps protect the brain from harmful substances.

Brain development: During brain development, L-glutamine plays a vital role in neuronal proliferation, migration, and differentiation. It provides the necessary building blocks for the synthesis of proteins and neurotransmitters, supporting the growth and maturation of the developing brain.

Glutamine and ammonia detoxification: L-glutamine plays a role in ammonia detoxification in the CNS. Ammonia is a toxic byproduct of various metabolic processes, including the breakdown of amino acids. In astrocytes, L-glutamine reacts with ammonia to form glutamate and glutamine synthetase, an enzyme involved in this conversion. This process helps remove excess ammonia and maintain proper ammonia levels in the brain, which is crucial for neuronal health and function

Localization and functionality of Gln-accepting amino acid exchangers in membranes of CNS cells



Vitamin B12:

Nerve cell maintenance and myelin synthesis: Vitamin B12 is essential for the maintenance and preservation of nerve cells. It is involved in the synthesis of myelin, a protective sheath that surrounds nerve fibers and facilitates efficient nerve signal transmission. Myelin ensures the proper functioning of the nervous system by insulating and protecting nerve fibers.

Neurotransmitter synthesis: Vitamin B12 is involved in the synthesis of certain neurotransmitters in the brain, including serotonin, dopamine, and noradrenaline. These neurotransmitters play crucial roles in regulating mood, cognition, and overall brain function.

Methylation reactions: Vitamin B12 is a cofactor for enzymes involved in various methylation reactions in the body. Methylation is a biochemical process that regulates gene expression, neurotransmitter metabolism, and the synthesis of important molecules in the nervous system. Vitamin B12 helps support these methylation reactions, which are vital for proper nervous system function.

Aging and cognitive decline: Vitamin B12 has been studied for its potential role in age-related cognitive decline and neurodegenerative diseases such as Alzheimer's disease. While research is ongoing, some studies suggest that maintaining adequate vitamin B12 levels may help reduce the risk of cognitive decline and promote brain health in older adults.

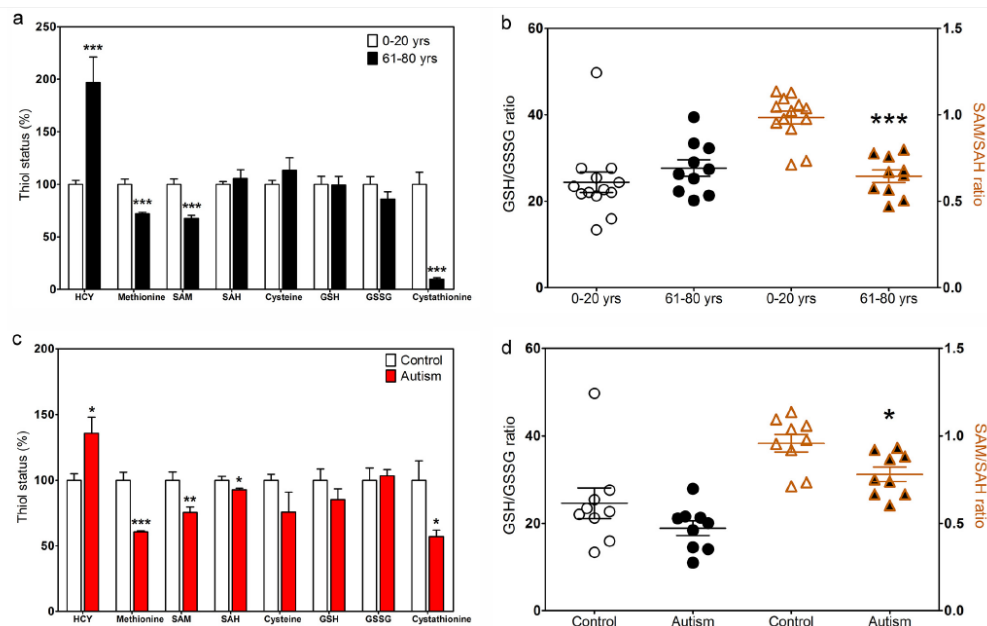
Neuroprotective effects: Vitamin B12 exhibits neuroprotective properties, which means it helps protect nerve cells from damage and degeneration. It has antioxidant properties that can help reduce oxidative stress, a process linked to neuronal damage and neurodegenerative diseases.

Mood regulation: Vitamin B12 plays a role in mood regulation and mental well-being. It is involved in the synthesis of neurotransmitters such as serotonin, dopamine, and noradrenaline, which are important for regulating mood, emotions, and overall mental health. Deficiency in vitamin B12 has been associated with mood disorders and an increased risk of depression.

Cognitive function: Vitamin B12 is essential for proper cognitive function, including memory, concentration, and overall cognitive performance. It supports the production of myelin, which is necessary for efficient nerve signal transmission and optimal cognitive processing. Adequate vitamin B12 levels are important for maintaining cognitive health and preventing cognitive decline.

Sleep regulation: Vitamin B12 is involved in the regulation of the sleep-wake cycle. It helps regulate the production.

Redox and methylation metabolites in aging and autism



(a) Redox and methylation pathway metabolites in control subjects of 0–20 yrs (n = 12) compared to subjects of 61–80 yrs (n = 10). (b) GSH/GSSG ratio (left) and SAM/SAH ratio (right) in aging. (c) Redox and methylation pathway metabolites in frontal cortex of autistic subjects (n = 9) compared to age-matched controls (n = 9). (d) GSH/GSSG ratio (left) and SAM/SAH ratio (right) in autism.