Citicoline

- Effects of Citicoline in Children with Autism Spectrum Disorder: A Randomized, Open-label Clinical Trial
- Impact of Oral Citicoline, Antioxidant Vitamins, and Blackcurrant Supplementation on Primary Open-Angle Glaucoma: An OCT and OCTA Study
- Ameliorative effect of citicoline on cyclophosphamide-induced lung injury
- Randomized, Cross over, Multicenter, Single-Blind Study Comparing Citicoline 500 mg/Homotaurine 50 mg/Vitamin B3 54 mg/Pyrroloquinoline Quinone 5 mg (Neuprozin Mito()) and Citicoline 800 mg (Cebrolux()) on Pattern Electroretinogram (PERG) and Quality of Life in Patients with Primary Open-Angle Glaucoma with Well-Controlled Intraocular Pressure
- Citicoline and Coenzyme Q10: Therapeutic Agents for Glial Activation Reduction in Ocular Hypertension
- Pharmacotherapy for Poststroke Cognitive Impairment and Poststroke Cognitive Impairment With Dementia: A Review
- Integrating transcriptomics with disease-gene network and identification of EGFR kinase target: inhibitor discovery through virtual screening of natural compounds for brain cancer therapy
- Percheron syndrome with memory impairment as chief manifestation: A case report

Citicoline, also known as cytidine diphosphate-choline (CDP-choline), is a naturally occurring compound that is involved in the synthesis of phospholipids, which are essential components of cell membranes. It has gained attention for its potential cognitive and neuroprotective effects. Here are some key points about citicoline:

Mechanism of Action: Citicoline is believed to work through multiple mechanisms. It is converted into cytidine and choline in the body, which are then used in the synthesis of phospholipids, including phosphatidylcholine, a major component of cell membranes. Citicoline also increases levels of neurotransmitters, such as acetylcholine, dopamine, and noradrenaline, which are important for cognitive function.

Cognitive Enhancement: Citicoline has been studied for its potential cognitive-enhancing effects. It may improve memory, attention, and other cognitive functions. Some studies suggest that citicoline can enhance cognitive performance in individuals with conditions such as age-related cognitive decline, mild cognitive impairment, and certain neurological disorders.

Neuroprotection: Citicoline has been investigated for its neuroprotective properties. It may help protect neurons from damage caused by oxidative stress, inflammation, and other factors that can contribute to neurodegenerative diseases. Citicoline has shown promise in preclinical and clinical studies for conditions like stroke, traumatic brain injury, and Parkinson's disease.

Eye Health: Citicoline has also been explored for its potential benefits in eye health. It may help protect the retina and optic nerve and support visual function. Some research suggests that citicoline supplementation may have a positive impact on conditions such as glaucoma and age-related macular degeneration (AMD).

Safety and Side Effects: Citicoline is generally considered safe and well-tolerated when taken orally or administered intravenously. Reported side effects are typically mild and transient, including gastrointestinal symptoms like diarrhea, nausea, and stomach discomfort. However, individuals with certain medical conditions or who are taking specific medications should consult with a healthcare professional before using citicoline.

It's important to note that while there is some evidence supporting the potential benefits of citicoline, further research is needed to fully understand its mechanisms of action and therapeutic applications. As with any dietary supplement or medication, it's recommended to consult with a healthcare professional before starting citicoline or any other new treatment.

The maximum neuroprotective effect of citicoline was observed when it was administered 60 min before the simulation of ischemia and was completely prevented by preliminary administration of a selective P2Y6 receptor antagonist MRS2578. The obtained experimental data attest to the leading role of receptor mechanisms in the implementation of neuroprotective activity of citicoline [1)].

1)

Sufianova GZ, Shapkin AG, Khlestkina MS, Maslov LN, Mukhomedzyanov AV, Voronkov NS, Sufianov AA. The Role of P2Y6 Receptors in the Mechanisms of the Neuroprotective Effect of Citicoline. Bull Exp Biol Med. 2023 Jun 20. doi: 10.1007/s10517-023-05808-z. Epub ahead of print. PMID: 37338760.