Brain aging constitutes an important aspect of the aging process. Considerable experimental evidence that brain aging takes part in the development of neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease (1). Cognitive disorders (Alzheimer’s, Parkinson’s, etc.) are the unresolved problems of an aging society. For example Alzheimer's disease in the population has 17% between 65-69 years, the incidence increases with age and in people after the age of 95 about 50% (2). The underlying cause of the aging process is not illuminated enough by now. However, it can be said that it is complex and multifactorial. One of the theories that explain this process is the oxidative stress theory (3). This theory, as to date; progressive oxidative damage due to excessive accumulation of reactive oxygen species and free radicals comprise lead to physiological dysfunction. 

Astaxanthin (ASTX), a pink -orange carotenoid pigment, naturally exists in many aquatic animals, such as shrimp, crab and salmon (4). Haematococcus pluvialis is believed to accumulate the highest levels of astaxanthin in nature (it can accumulate˃30 g of astaxanthin kg-1 dry biomass). Studies have shown that ASTX has antioxidant, antitumor, anticancer, antidiabetic, neuroprotective and immunomodulatory properties. It has been reported that ASTX decreased malondialdehyde and nitric oxide levels markedly restored the GSH-PX and SOD activities, markedly inhibited neuronal degeneration (4) in experimental brain pathologies. 

Keywords: Oxidative stress; Astaxanthin; Neurodegenerative diseases; Antioxidants.

References