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### Plasmalogens reduce the level of beta amyloid in mouse brain and improve cognitive functions

**Abstract:**

Amyloid beta (Aβ) is a product of neuronal metabolism that is involved in maintaining brain homeostasis. In the normal state, intensive Aβ formation in the brain is accompanied by its effective clearance. However, excessive accumulation of Aβ is observed in the aging brain and in subjects with Alzheimer's disease (AD) leading to cognitive impairment and memory loss. There are no effective methods for reducing Aβ levels in the brain and treating AD, and therefore the development of innovative strategies in this area is an urgent task for medicine. Plasmalogens is one of the key brain lipids that can be beneficial for AD and cognitive aging. Here we investigated the efficacy of plasmalogens in promoting clearance of Aβ and improving cognitive function in AD mice and mice of different ages. The results demonstrated that plasmalogens effectively reduce Aβ levels in the brain and facilitate learning in aged but in not old mice. In AD mice, plasmalogens improve clearance of Aβ, which is associated with an increase in general motor activity, improvement of emotional status and learning ability. In sum, our data suggest that plasmalogens could be a promising candidate for concomitant therapy of AD and age-related brain diseases to enhance clearance of Aβ from the brain and cognitive functions. This study was supported by the RSF project No. 24-75-10047.

**Biography**

**Anastasiia Semiachkina-Glushkovskaia,** student of the Faculty of Computer Science and Information Technology of the Saratov State University. She develops software for analyzing biological experiments, including automated systems for tracking the operational behavior of rodents in natural cage conditions.