Abstract:

Lipids are an essential components of cell membranes and their homeostasis plays an important role in the development of Alzheimer´s disease. The aggregation and neurotoxic effects of amyloid β, mainly Aβ42, on the neural cell membrane are crucial for pathological changes in the brain tissue which leads to its degeneration and loss of cognitive functions. The complex relationship between amyloid β and lipids is also supported by fact that membrane lipids do not only support the amyloid binding to the membrane, but also they regulate the splicing of the amyloid precursor protein, therefore the biosynthesis of β amyloid. The most important binding partners of Aβ42 include gangliosides, especially the ganglioside GM1, but also sphingomyelin and cholesterol. In contrast, glycerophospholipids primarily affect the process of the protein production.