

# Trehalose against Alzheimer's Disease: Insights into a Potential Therapy

Khalifeh M.

Read M.I.

Barreto G.E.

Sahebkar A.

Trehalose is a natural disaccharide with a remarkable ability to stabilize biomolecules. In recent years, trehalose has received growing attention as a neuroprotective molecule and has been tested in experimental models for different neurodegenerative diseases. Although the underlying neuroprotective mechanism of trehalose's action is unclear, one of the most important hypotheses is autophagy induction. The chaperone-like activity of trehalose and the ability to modulate inflammatory responses has also been reported. There is compelling evidence that the dysfunction of autophagy and aggregation of misfolded proteins contribute to the pathogenesis of Alzheimer's disease (AD) and other neurodegenerative disorders. Therefore, given the linking between trehalose and autophagy induction, it appears to be a promising therapy for AD. Herein, the published studies concerning the use of trehalose as a potential therapy for AD are summarized, providing a rationale for applying trehalose to reduce Alzheimer's pathology. © 2020 Wiley Periodicals LLC

Alzheimer's disease

amyloid ?

autophagy

tau

treatment

trehalose