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Utility of Autophagy in Treating Alzheimer's Disease

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Title

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Abstract

Alzheimer's Disease (AD) is the most common cause of dementia in developed countries. The global prevalence is estimated to be as high as 24 million and is expected to continue growing. Despite more than 100 thousand papers on AD encompassing several decades of research, our understanding of the underlying pathogenesis remains limited, consequently contributing to the stagnancy in developing effective therapeutic treatment options. Enormous data in the literature provides opportunities to theoretically evaluate the most likely effective approach for this disease. By digging into the relationship between autophagy and risk factors of AD, we find that autophagy is directly or indirectly involved in most of these individual factors. For example, natural activation of autophagy has been shown to directly improve all diabetes-related factors that are associated with AD. Other examples include but are not limited to factors related to chronic inflammation, brain damage, infection, mental health, mitochondrial dysfunction, and brain nutrient deficiency. Here, we present our findings and the basis for the hypothesis that naturally generated autophagy is likely the most powerful tool currently existing in fighting AD.