New theory on the origins Alzheimer’s opens alternate research, treatment avenues

Alzheimer’s disease, the most common cause of dementia among the elderly, is characterized by plaques and tangles in the brain, with most efforts at finding a cure focused on these abnormal structures. But a University of California, Riverside, research team has identified alternate chemistry that could account for the various pathologies associated with the disease.

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An organelle within the cell, the lysosome serves as the cell’s trashcan. Old proteins and lipids get sent to the lysosome to be broken down to their building blocks, which are then shipped back out to the cell to be built into new proteins and lipids.

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[Chemistry professor Ryan] Julian’s collaborative team of researchers in the Department of Chemistry and the Division of Biomedical Sciences at UC Riverside posits that long-lived proteins, including beta-amyloid and tau, can undergo spontaneous modifications that can make them undigestible by the lysosomes.

“Long-lived proteins become more problematic as we age and could account for the lysosomal storage seen in Alzheimer’s, an age-related disease,” Julian said. “If we are correct, it would open up new avenues for treatment and prevention of this disease.”

Read full, original post: An alternate theory for what causes Alzheimer’s disease