Medical Xpress

Alzheimer's study: Drug combination improves memory skills in mice

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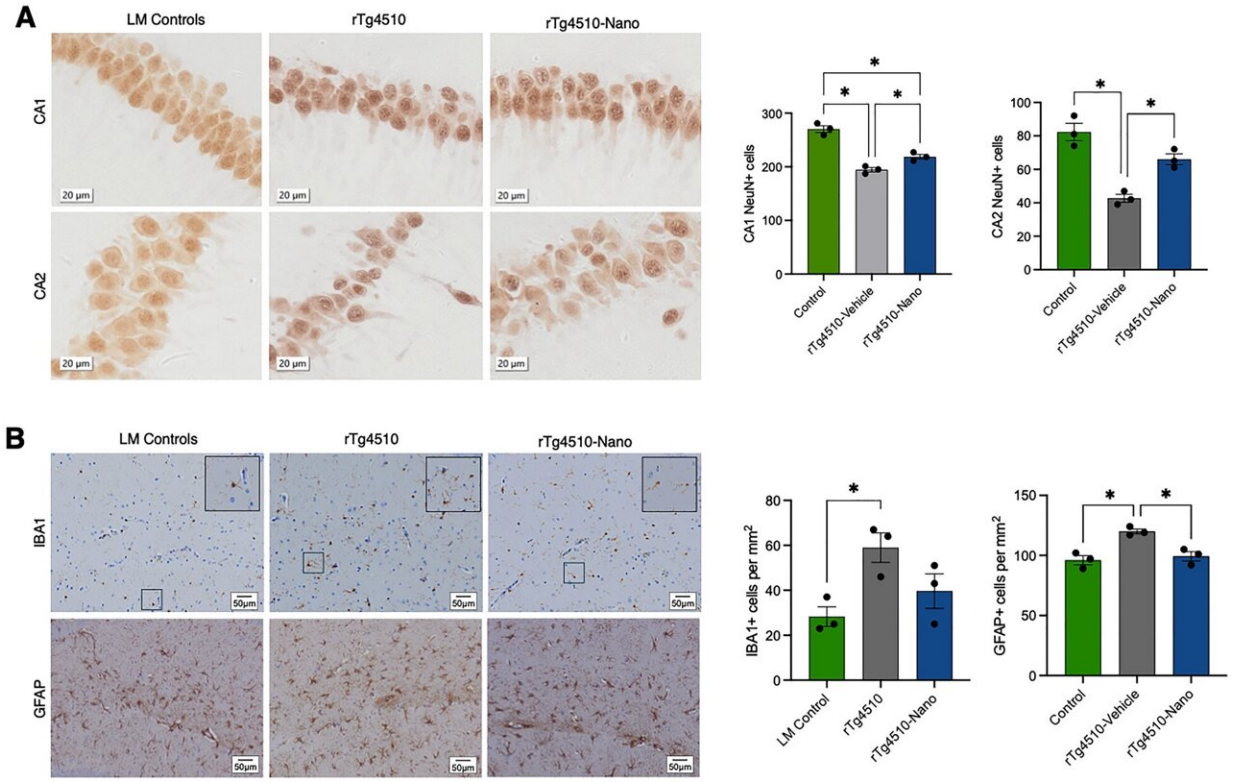

Changes in glial cell and neuronal numbers with Nanoligomer treatment in tauopathy mice. Credit: *Journal of Neuroinflammation* (2024). DOI: 10.1186/s12974-024-03182-9

Laboratory mice with cognitive issues including Alzheimer's disease showed improved memory skills within a couple of weeks of treatment

with a new medicine tested at Colorado State University.

The combination of drugs targets two brain proteins critical in neuroinflammation, which is involved in brain aging and Alzheimer's, according to a study published in July in the *Journal of Neuroinflammation* featuring CSU researchers.

Results from the study show this medicine could become "a game-changing tool" against Alzheimer's, researchers said.

"There are no effective treatments right now," said Devin Wahl, a CSU postdoctoral fellow, who co-authored the study. "We have treatments that can manage symptoms, but we don't have any that can stop the disease. We want to try to identify novel treatments that may be effective to slow, or even reduce, the effects of Alzheimer's disease."

This cocktail of medicines could also improve memory in aging adults, the study found, and, potentially, reverse cognitive decline.

The research came out of a partnership between CSU faculty member Tom LaRocca's Healthspan Biology Lab and Colorado-based biotech company Sachi Bio.

"This is a novel and effective treatment to improve memory in mice," said Prashant Nagpal, who co-founded Sachi Bio with his wife, Anushree Chatterjee. "A very important finding that we saw in this study is that you can reverse some cognitive decline. We are hoping to take this to human clinical trials next year."

The mice behavioral tests measured memory and grip strength because grip strength and muscle function are closely linked to brain function, researchers said.

"If we can target what comes before Alzheimer's disease, which is what this drug is meant to do, that will give people more treatment options, especially earlier in life," Wahl said.

By next year or 2026, Nagpal hopes there will be a more conclusive data set including human trials.

"We've all been touched by seeing older parents and family members just being a shadow of themselves," Nagpal said. "It's just heartbreaking. It may seem like just a glimmer of hope, but can you latch onto it and just, you know, go for it?"

More information: Devin Wahl et al, Nanoligomers targeting NF-κB and NLRP3 reduce neuroinflammation and improve cognitive function with aging and tauopathy, *Journal of Neuroinflammation* (2024). DOI: 10.1186/s12974-024-03182-9