Study: New drug candidate reduced brain inflammation, protected against cognitive decline in Alzheimer's mouse model

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An anti-inflammatory drug candidate, known as 3,6'-dithiopomalidomide (DP) and designed by researchers at the National Institute on Aging (NIA), protected lab mice against cognitive decline by reducing brain inflammation. An international research team led by the NIA scientists has published their findings in *Alzheimer's and Dementia: The Journal of the Alzheimer's Association*.

The study results provide new evidence that brain inflammation—which occurs decades before Alzheimer's symptoms are noticeable—is a key neuropathological pathway of interest in efforts to find potential treatments for Alzheimer's.

To investigate whether brain inflammation was directly involved in cognitive loss, researchers used a mouse model specially designed to produce up to five times the normal levels of beta-amyloid plaques. These plaques are a hallmark sign of Alzheimer's and are thought to contribute to a destructive inflammatory response in the brain. After four months of treatment with DP, the mice showed reduced brain inflammation and neuron death, and they had more neural connections in the brain areas responsible for memory and attention. DP-treated mice also showed improvement in behavioral laboratory tasks that test spatial and working memory as well as anxiety behaviors and motor function, results the researchers see as protective against cognitive impairment.

More information: Daniela Lecca et al, Role of chronic neuroinflammation in neuroplasticity and cognitive function: A hypothesis, *Alzheimer's & Dementia* (2022). DOI: 10.1002/alz.12610

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