

New insight into Alzheimer's disease pathology

May 4 2009

An Alzheimer's-related protein helps form and maintain nerve cell connections, according to a study published in the May 4 print issue of the *Journal of Cell Biology*.

The [protein](#), called presenilin, is mutated in many cases of inherited [Alzheimer's disease](#). Although the inherited form of Alzheimer's is relatively rare, researchers hope that by studying the function of the protein, they will glean insights into the pathology of the more common non-inherited form of the disease. Presenilin is known to form part of an enzyme complex called gamma secretase, which sits in [nerve](#) cell membranes and chops up other proteins. Inoue et al have found a new target of gamma secretase, a protein called EphA4.

The product of EphA4 cleavage drove the formation and maintenance of dendritic spines - the nerve cell's receivers for transmitted signals. These results fit with a growing hypothesis that failing nerve transmission might be an early step in the pathology of Alzheimer's.

More information: Inoue, E., et al. 2009. *J. Cell Biol.*
doi:10.1083/jcb.200809151. www.jcb.org

Source: Rockefeller University ([news](#) : [web](#))

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