

Road block as a new strategy for the treatment of Alzheimer's

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Blocking a transport pathway through the brain cells offers new prospects to prevent the development of Alzheimer's. Wim Annaert and colleagues of VIB and K.U. Leuven discovered that two main agents involved in the inception of Alzheimer's disease, the amyloid beta precursor protein (APP) and the beta secretase enzyme (BACE1), follow a different path through the brain cells to meet up. It is during the eventual meeting between protein and enzyme that the basis is laid for the development of the disease. The results of the study were published in the *Proceedings of the National Academy of Sciences*.

Wim Annaert suggests that "closing off or rerouting the path which beta secretase follows to get to APP may perhaps be used to inhibit the rise of the disease. However, a great deal of additional research will be necessary to confirm whether this discovery can effectively lead to a drug."

The presence of [amyloid plaques](#) is typical of the brains of Alzheimer patients. These plaques are abnormal accumulations of a sticky short protein (beta amyloid) between the [nerve cells](#). The [beta amyloid](#) peptide develops when the APP [precursor protein](#) is cut into pieces the wrong way, in a reaction which also involves the beta secretase enzyme. Overproduction of these peptides may give rise to the formation of plaques. The plaques disrupt the normal functioning of the brain. Preventing the formation of these plaques is a possible strategy for inhibiting the disease.

Alzheimer's is a memory disorder that affects up to 70% of patients with dementia. There are about 100 000 people with Alzheimer's in Belgium. The disease slowly - step by step - destroys [brain cells](#) in the deep part of the brain that serve for memory and knowledge. Since Alois Alzheimer first reported on the disease 100 years ago, scientists have been searching for ways of treating the disease.

Provided by Flanders Institute for Biotechnology

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