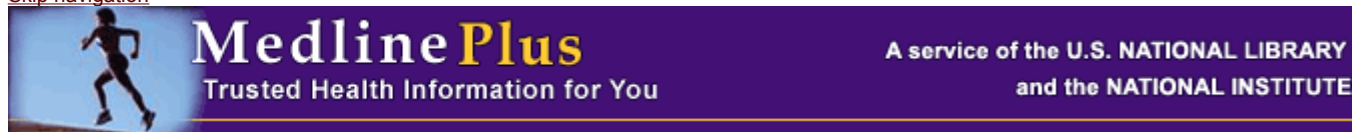


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Alzheimer's plaque precursor is imaged



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CHICAGO, Nov 22, 2005 (UPI via COMTEX) -- University of Illinois-Chicago chemists have obtained the first molecular-level image of Alzheimer's precursors using a nuclear magnetic resonance system.

Scientists believe understanding the molecular structure of the bundled fibrils that form the brain plaques seen in Alzheimer's disease may help identify targets for new drugs to combat many neurodegenerative diseases.

Microscopic bundled fibrils made of proteins called amyloid-beta are presumed to be the toxic culprits in the senile plaques found in Alzheimer's patients' brains. But there's now increasing evidence even smaller assemblies of amyloid-beta found prior to formation of pre-fibrils are the real nerve-killers.

Researchers said electron microscope images of the nanometer-scale spherical assemblies failed to reveal any distinct molecular structure.

But now Yoshitaka Ishii, assistant professor of chemistry, and graduate student Sandra Chimon, determined the structure using a methodology developed with high-resolution solid-state nuclear magnetic resonance.

"This is the first case showing that these intermediate species, the smaller assemblies, have a well-defined structure," said Ishii.

Details were reported last month in the Journal of the American Chemical Society.

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