

Cancer-related protein may play key role in Alzheimer's disease

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The cancer-related protein Akt may profoundly influence the fate of the tau protein, which forms bundles of tangled nerve cell fibers in the brain associated with Alzheimer's disease, reports a new study led by researchers at the University of South Florida and the Mayo Clinic in Jacksonville, FL.

The study was published online Feb. 21 in the early edition of the *Proceedings of the National Academy of Sciences*. The findings may provide another piece of the puzzle in figuring out how tau proteins can poison nerve cells in the brain.

Akt is known to increase cancer cell survival capability and has become a target in the development of some cancer-inhibitor drugs. The abnormal accumulation of tau protein tangles kills nerve cells and is considered one of the hallmarks of Alzheimer's disease.

“This study describes for the first time a new function for the cancer-related protein Akt – one that may help promote Alzheimer's disease pathology,” said lead author Chad Dickey, PhD, assistant professor of molecular pharmacology and physiology at USF. “We found that increased amounts of Akt may prevent the removal of abnormal proteins, such as tau, causing these proteins to accumulate and disrupt the balance within the cells.”

While this Akt-induced imbalance might result in cancer cells continuing to divide uncontrollably, Dr. Dickey suggests it likely has a different

effect in Alzheimer's disease. "The nerve cells may try to divide in the brain, but cannot, and therefore die," he said. "Thus regulating levels of Akt, rather than its activity, may be beneficial to sufferers of diseases of aging, such as cancer, Alzheimer's and even diabetes."

Source: University of South Florida

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