

### **A new face of mTor in Alzheimer's disease**

The mammalian target of rapamycin (mTor) is known as a serine/threonine protein kinase, plays a central role in controlling protein homeostasis and cell survival. Is mTor a new drug target for Alzheimer's disease (AD)?

Our Previous studies implicated that mTor played an important role in AD, an increasing level of mTor signaling was found in AD patients' brain, which makes it interesting to study the effects of mTor.

The pathogenesis of tangles in AD brains is a chronic process, it has been puzzling us for a long why the neurons develop tangles in the brain, but they do not die. It is believed that the progressive accumulation of toxic phospho-tau requires a micro-condition in which neurons are protected from death. But until now, doctors a litter understood the molecular process about it. In patients with Alzheimer's disease, previous research found mTor C1 involved the formation of toxic phosphor-tau. In the present study, we have performed a mass spectrometry to identify specific protein expression changes. The changed proteins have related to cell survival. The major findings of this study are the implication of mTor in cell viability modulation by activating the pro-survival machinery.

Here we provided the evidence that up-regulated mTor directly promotes cell survival by suppressing mitochondria-caspases-apoptotic pathway. However, the other *in vivo* trials should be a new story to shed light of the role of mTor in AD, which will be a new evidence mTor will be new drug target in AD.