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Molecular Mechanism of Neurodegenerative Proteinopathy



Many neurodegenerative diseases with dementia, such as Alzheimer's disease and its related disorders, are characterized by intraneuronal filamentous inclusions of abnormally hyperphosphorylated tau. The events leading to filamentous tau formation are believed to induce propagation of tau pathology and neurodegeneration.

My broad goal is to understand how tau protein forms filamentous structure and concerns in the events in the pathogenesis and progression of neurodegeneration during aging and to develop an effective and a safety therapy for dementia.

Publications (selected)

- Yoshida H**, Goedert M. (2012) Phosphorylation of microtubule-associated protein tau by AMPK-related kinases. *J Neurochem.* 120(1), 165-176.
- Virdee K, **Yoshida H**, Peak-Chew S, Goedert M. (2007) Phosphorylation of human microtubule-associated protein tau by protein kinases of the AGC subfamily. *FEBS Lett.* 581(14), 2657-2662.
- Spina S, Murrell JR, **Yoshida H**, Ghetti B, Bermingham N, Sweeney B, Dlouhy SR, Crowther RA, Goedert M, Keohane C. (2007) The novel Tau mutation G335S: clinical, pathological and molecular characterization. *Acta Neuropathol.* 113(4), 461-70.
- Yoshida H**, Goedert M. (2006) Sequential phosphorylation of tau protein by cAMP-dependent protein kinase and SAPK4/p38δ or JNK2 in the presence of heparin generates the AT100 epitope. *J Neurochem.* 99(1), 154-164.
- Yoshida H**, Craxton M, Jakes R, Zibae S, Tavaré R, Fraser G, Serpell LC, Davletov B, Crowther RA, Goedert M. (2006) Synuclein proteins of the pufferfish *Fugu rubripes*: sequence and functional characterization. *Biochemistry.* 45(8), 2599-2607.
- Yoshida H**, Hastie CJ, McLauchlan H, Cohen P, and Goedert M. (2004) Phosphorylation of microtubule-associated protein tau by isoforms of c-Jun N-terminal kinase. *J Neurochem* 90(2), 352-358.
- Takao M, Ghetti B, **Yoshida H**, Piccardo P, Narain Y, Murrell JR, Vidal R, Glazier BS, Jakes R, Tsutsui M, Spillantini MG, Crowther RA, Goedert M and Koto A. (2004) Early-onset dementia with Lewy bodies. *Brain* 127(2), 137-147.
- van Herpen E, Rosso SM, Serverijnen LA, **Yoshida H**, et al.. (2003) Variable phenotypic expression and extensive tau pathology in two families with the novel tau mutation L315R. *Ann. Neurol.* 54(5), 573-581
- Yoshida H** and Goedert M. (2002) Molecular cloning and functional characterization of chicken brain tau: isoforms with up to five tandem repeats. *Biochemistry* 41(51), 15203-15211.
- Allen B, Ingram E, Takao M, Smith MJ, Jakes R, Virdee K, **Yoshida H**, Holzer M, Craxton M, Emson PC, Atzori C, Migheli A, Crowther RA, Ghetti B, Spillantini MG, Goedert M. (2002) Abundant tau filaments and nonapoptotic neurodegeneration in transgenic mice expressing human P301S tau protein. *J. Neurosci.* 22(21), 9340-9351.
- Yoshida H**, Crowther RA, Goedert M. (2002) Functional effects of tau gene mutations deltaN296 and N296H. *J. Neurochem.* 80(3), 548-51.
- Spillantini MG, **Yoshida H**, Rizzini C, Lantos PL, Khan N, Rossor MN, Goedert M, Brown J. (2000) A novel tau mutation (N296N) in familial dementia with swollen achromatic neurons and corticobasal inclusion bodies. *Ann. Neurol.* 48(6), 939-43.

