

DANDRITE & NeuroCampus Seminar

Wednesday 5 November 2014 at 15.00 - 16.00

Palle Juul-Jensen/DNC Auditorium, bldg. 10, Nørrebrogade 44, 8000 Aarhus C
Aarhus University Hospital



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Identifying the dynamics of Lewy body formation in Lewy body diseases

Background: Lewy bodies are intraneuronal cytoplasmic inclusions with core fibrils made from aggregations of alpha-synuclein. The dynamics of how these inclusions form within individual neurons, infiltrate the brain, and interact with other age-related pathologies have been identified.

Results: Within individual neurons, Lewy bodies form from a build up of punctate membrane aggregates of phosphorylated alpha-synuclein that coalesce into loosely packed filaments that undergo ubiquitination and "mature" by compaction. A slow pace of relatively restricted regional Lewy body involvement occurs in Parkinson's disease, while the most rapid and spatially expansive molecular involvement occurs in patients with dementia. Lewy pathology has been shown to be transmitted between vulnerable neurons in humans.

Conclusions: While Lewy bodies are the same in different neurodegenerative diseases, assessment of different pathological cohorts shows that the timing and tempo of their cellular progression relates to their clinical phenotype and involve different molecular interactions.

Biography of Glenda Halliday, BScHons, PhD

Prof. Halliday received her degrees at the University of New South Wales and postdoctoral training at the Centre for Neuroscience, Flinders University of South Australia prior to returning to Sydney as an Australian Research Council Queen Elizabeth II Fellow. She has been a Research Fellow of the National Health and Medical Research Council of Australia (NHMRC) since then and is one of the senior scientists at Neuroscience Research Australia (joined in 1993). She is currently Professor of Neuroscience at the University of New South Wales and Director of the Sydney Brain Bank, as well as a NHMRC Senior Principal Research Fellow working on the pathogenesis of frontotemporal and motor neurodegenerative syndromes, including parkinsonian disorders. Prof. Halliday has published over 300 research articles and was elected president of the Australian Neuroscience Society for 2006-2007. She serves on a number of international editorial and advisory boards.

Host: Poul Henning Jensen (phj@biomed.au.dk), DANDRITE, Aarhus University