

ELRIG Abstract

Title: Measuring mitophagy and mitochondrial dysfunction in neurodegeneration

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Mitochondrial dysfunction is an underlying factor in a range of neurodegenerative diseases, and selective turnover of damaged mitochondria by the autophagy-lysosome system (termed mitophagy) has been proposed as a potential therapeutic mechanism. We have developed a suite of assays to measure mitochondrial health, mitophagy induction, and inter-organelle contacts to profile putative therapeutic targets for their effect on mitochondrial health and mitophagy. Using well-characterised mitophagy inducers Antimycin A and Oligomycin, we show that each assay can measure mitochondrial function or mitophagy induction in a variety of formats. Taken together, this suite of assays can be used to test pharmacological interventions that boost mitophagy in order to promote mitochondrial health in neurodegenerative disease.