

28AB-ISMS01 Rejuvenating the Motor Driven Cargo Transport Impaired by Proteotoxicity

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Ataxia, axonopathy, motor neuron problems and various form of neurodegenerative disease (examples Alzheimer) are extreme spectrum of ageing disorders that poses threat to our society including healthcare burden and compromised quality of life. Proteotoxicity has been attributed as a leading cause of various for neurodegeneration documented till date. Proteotoxicity can occurs due to inherent misfolding of many protein (Tau, alpha-synuclein) at certain conditions besides post translational modification, metabolic shift, genetic variation and various other unknown reasons. Here, we have studied the proteotoxicity using a bio-motility model system in a lab on chip to mimic the neurodegenerative chemistry. We have found that most of the neurodegenerative disorder is initiated or pass through a common focal point by arresting the motor functions, involving a common pattern of protein-protein cross talk. Additionally, we have found that some unique nano construct that has the ability to reverse the neurodegenerative proteotoxic phenotypes by resuming the impaired motor driven cargo transport, thus having an anti-ageing potential to cure many age related neuro disorders.