Alzheimer's disease (AD) is a neurodegenerative disorder characterized by a slowly progressive dementia and brain atrophy. The degenerative process affects primarily the neocortical and limbic cortices, where there is an accumulation of neuritic plaques mainly composed of beta-amyloid 1-42 (Aβ42), and neurofibrillary tangles (NFTs) containing Tau with loss of neurons and synapses.

The study was conducted in the following groups of AD, Non AD type Dementia (NAD), Neurological Controls (NC) and Healthy Controls (HC). For the diagnosis of AD patients, when results were compared between AD patients and other 3 groups (NAD, NC and HC), Ab42 alone has shown specificity of 86.20% and sensitivity of 84.20% where as Tau alone has shown specificity of 94.82% and sensitivity of 92.85% and ubiquitin alone has shown specificity of 95.60% and sensitivity of 93.1%. When CSF Tau and Ab42 were combined, it resulted in specificity of 94.82% and sensitivity of 75.38% with respect to all controls (NAD, NC and HC), where as when CSF Ab42 was combined with Apo-Eε4 allele it resulted in a specificity of 98.1% and sensitivity of 72.1% with respect to controls in the diagnosis of AD. Intriguingly when ubiquitin is combined with Tau and Ab42, it resulted in specificity of 100% and sensitivity of 93.1%. Silencing of PS1 with siRNA lead to decreased Ab42 production in AD featured IMR-32 cells. Since accumulation of Aβ42 is the main feature of AD pathology, targeting of PS1 can be an effective therapeutic intervention for the treatment of AD in future.