Internal Webinar

Detection and characterization of ApoE-Aβ42 complexes using two color coincident detection methods

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Amyloid beta 42 (Aβ42) is an intrinsically disordered protein, consists of 42 amino acid. The pathological hallmark of Alzheimer's disease (AD) is extracellular deposit of plaques, which contain fibrillar aggregates of Aβ. However, the ε4 allele of apolipoprotein E is a major genetic risk factor of Alzheimer's diseases (AD). Several *in vivo* and *in vitro* studies indicate that the interaction between ApoE4 and Aβ may play a crucial role in the aetiology of AD. Recent evidence suggests that ApoE may interact with toxic oligomers of Aβ and stabilize those. However, characterization of the complexes of oligomeric Aβ and ApoE remains challenging due to the small size and transient nature of the oligomers. We have used two-colour coincident detection (TCCD) methods to detect and characterize the ApoE-Aβ42 complexes. The complexes are heterogeneous in terms of composition and contain sub-stoichiometric amount of ApoE. Furthermore, ApoE4 promote more complex formation compared to ApoE3.

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