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Amyloid Aggregation and Membrane Disruption by Amyloid Proteins

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Amyloidogenesis has been the focus of intense basic and clinical research, as an increasing number of amyloidogenic proteins have been linked to common and incurable degenerative diseases including Alzheimer's, type II diabetes, and Parkinson's. Recent studies suggest that the cell toxicity is mainly due to intermediates generated during the assembly process of amyloid fibers, which have been proposed to attack cells in a variety of ways. Disruption of cell membranes is believed to be one of the key components of amyloid toxicity. However, the mechanism by which this occurs is not fully understood. Our research in this area is focused on the investigation of the early events in the aggregation and membrane disruption of amyloid proteins, Islet amyloid polypeptide protein (IAPP, also known as amylin) and amyloid-beta peptide, on the molecular level. Structural insights into the mechanisms of membrane disruption by these amyloid proteins and the role of membrane components on the membrane disruption will be presented.

References:

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