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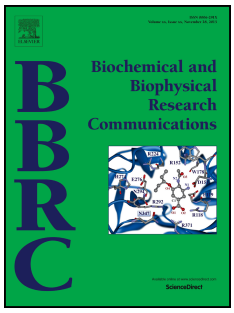

Structural differences between amyloid beta oligomers

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ACCEPTED MANUSCRIPT

Structural differences between amyloid beta oligomers

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Abstract

In Alzheimer's disease, soluble Aβ oligomers are believed to play important roles in the disease pathogenesis, and their levels correlate with cognitive impairment. We have previously shown that Aβ oligomers can be categorized into multiple structural classes based on their reactivity with conformation-dependent antibodies. In this study, we analyzed the structures of Aβ40 oligomers belonging to two of these classes: fibrillar and prefibrillar oligomers. We found that fibrillar oligomers were similar in structure to fibrils but were less stable towards denaturation while prefibrillar oligomers were found to be partially disordered. These results are consistent with previously proposed structures for both oligomer classes while providing additional structural information.

Graphical abstract

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