Enhanced Fibril Fragmentation of N-Terminally Truncated and Pyroglutamyl-Modified Aβ Peptides.

Wulff M, Baumann M, Thümmler A, Yadav JK, Heinrich L, Knüpfer U, Schlenzig D, Schierhorn A, Rahfeld JU, Horn U, Balbach J, Demuth HU, Fändrich M (2016) Enhanced Fibril Fragmentation of N-Terminally Truncated and Pyroglutamyl-Modified Aβ Peptides. *Angew Chem Int Ed* 55(16), 5081-5084.

Details

PubMed

Abstract

N-terminal truncation and pyroglutamyl (pE) formation are naturally occurring chemical modifications of the Aβ peptide in Alzheimer's disease. We show herein that these two modifications significantly reduce the fibril length and the transition midpoint of thermal unfolding of the fibrils, but they do not substantially perturb the fibrillary peptide conformation. This observation implies that the N terminus of the unmodified peptide protects Aβ fibrils against mechanical stress and fragmentation and explains the high propensity of pE-modified peptides to form small and particularly toxic aggregates.

Beteiligte Forschungseinheiten

Biotechnikum Miriam Agler-Rosenbaum Mehr erfahren

Leibniz-HKI-Autor*innen



Liesa Heinrich

Details



Uwe Horn

Details



Uwe Knüpfer

Details

Themenfelder

Camelide VHH-Antikörper

Identifier

doi: 10.1002/anie.201511099

PMID: 26970534