

β -Amyloid pathogenesis: Chemical properties versus cellular levels - DTU Orbit (08/11/2017)

β -Amyloid pathogenesis: Chemical properties versus cellular levels

Although genetic A β variants cause early-onset Alzheimer's disease, literature reports on A β properties are heterogeneous, obscuring molecular mechanisms, as illustrated by recent failures of A β -level targeting trials. Thus, we combined available data on A β levels and ratios, aggregation propensities, toxicities, and patient data for A β variants and correlated these data to identify heterogeneity, significant relations, and basis for consensus. Despite heterogeneity, age of disease onset correlates to A β levels ($R^2=0.38$, $P=.018$), but not to toxicities, A β_{42} levels, A $\beta_{42}/A\beta_{40}$ ratios, or aggregation propensities. Cytotoxicity correlates inversely with total A β_{42} ($R^2=0.65$, $P=.016$) and A $\beta_{42}/A\beta_{40}$ ratios ($R^2=0.76$, $P=.005$), i.e., chemical properties that increase A β_{42} also reduce toxicity. The complexity and heterogeneity of data reveal the need to understand these phenotypes better, e.g., by focusing on the chemical properties of the involved A β species.

General information

State: Published

Organisations: Department of Chemistry, Physical and Biophysical Chemistry

Authors: Tiwari, M. K. (Intern), Kepp, K. P. (Intern)

Number of pages: 11

Pages: 184–194

Publication date: 2016

Main Research Area: Technical/natural sciences

Publication information

Journal: Alzheimer's & Dementia

Volume: 12

Issue number: 2

ISSN (Print): 1552-5260

Ratings:

Web of Science (2017): Indexed Yes

Scopus rating (2016): CiteScore 8.56 SJR 3.982 SNIP 2.528

Web of Science (2016): Indexed yes

Scopus rating (2015): SJR 4.463 SNIP 2.794 CiteScore 9.27

Scopus rating (2014): SJR 6.26 SNIP 4.355 CiteScore 12.01

Scopus rating (2013): SJR 6.06 SNIP 4.41 CiteScore 11.97

ISI indexed (2013): ISI indexed yes

Scopus rating (2012): SJR 4.359 SNIP 3.137 CiteScore 9.34

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

Scopus rating (2011): SJR 2.136 SNIP 1.868 CiteScore 4.75

ISI indexed (2011): ISI indexed no

Scopus rating (2010): SJR 1.69 SNIP 1.359

Scopus rating (2009): SJR 0.972 SNIP 1.069

Scopus rating (2008): SJR 0.694 SNIP 0.62

Scopus rating (2007): SJR 0.663 SNIP 0.432

Scopus rating (2006): SJR 0.286 SNIP 0.183

Original language: English

Alzheimer's disease, Amyloid levels, Meta-analysis, Phenotype, Toxicity

DOIs:

10.1016/j.jalz.2015.06.1895

Source: FindIt

Source-ID: 2279916063

Publication: Research - peer-review › Journal article – Annual report year: 2016