Heparin induced dimerization of APP is primarily mediated by E1 and regulated by its acidic domain.

Hoefgen S, Coburger I, Roeser D, Schaub Y, Dahms SO, Than ME (2014) Heparin induced dimerization of APP is primarily mediated by E1 and regulated by its acidic domain. *J Struct Biol* 187(1), 30-37.

Abstract

The amyloid precursor protein (APP) and its cellular processing are believed to be centrally involved in the etiology of Alzheimer's disease (AD). In addition, many physiological functions have been described for APP, including a role in cell-cell- and cell-ECM-adhesion as well as in axonal outgrowth. We show here the molecular determinants of the oligomerization/dimerization of APP, which is central for its cellular (mis)function. Using size exclusion chromatography (SEC), dynamic light scattering and SEC-coupled static light scattering we demonstrate that the dimerization of APP is energetically induced by a heparin mediated dimerization of the E1 domain, which results in a dimeric interaction of E2. We also show that the acidic domain (AcD) interferes with the dimerization of E1 and propose a model where both, cis- and trans-dimerization occur dependent on cellular localization and function.

Leibniz-HKI-Autor*innen

Sandra Höfgen

Details

Identifier

doi: 10.1016/j.jsb.2014.05.006

PMID: 24859793