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Insulin Assembly at neutral pH: Comparison and Relevance to Abeta assembly KAHO LONG, THOMAS L. WILLIAMS, BRIGITA URBANC, Drexel University — Recent observations support a connection between Alzheimers disease (AD) and type 2 diabetes mellitus. These observations indicate that individuals with a disrupted insulin homeostasis of the body may have an increased risk of also developing AD later in life. This has lead us to begin an investigation into the role that insulin has on the ability of amyloid b-protein (Ab), specifically the 42 amino acid-long alloform Ab42, to disrupt membrane integrity. In this study we used a technique involving dye encapsulating large unilamellar vesicles, which is known as the calcein release assay. Using the calcein release assay we observed that the potency of Ab42 to disrupt the membrane integrity was inhibited by insulin in insulin concentration-dependent way. Our in vitro findings suggest a strong interaction between Ab42 and insulin, which may be of physiological relevance and may offer new therapeutic approaches against AD.

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