Chemical Engineering Thesis Defense

Expression, Characterization, and Structural Studies of Anti-amyloid Antibody Fragments

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abstract

Alzheimer's disease is a major problem affecting over 5.7 million Americans. Although much is known about the effects of this neurogenerative disease, the exact pathogenesis is still unknown. One very important characteristic of Alzheimer's is the accumulation of beta amyloid protein which often results in plaques. To understand these beta amyloid proteins better, antibody fragments may be used to bind to these oligomers and potentially reduce the effects of Alzheimer's disease. This thesis focused on the expression and crystallization of the fragment antigen binding antibody A4. A fragment antigen binding antibody was chosen to be worked with as it is more stable than many other antibody fragments. This particular fragment antigen binding antibody, A4 is important in Alzheimer's disease as it is able to identify toxic beta amyloid.

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