

Enzymatic Synthesis of a Homogenous Antibody Glycan

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Abstract

Alzheimer's disease (AD) is one of the major causes of death in the United States. Additionally, it is a neurodegenerative disorder and the most common cause of dementia. There are treatments for AD that can delay its symptoms in the modern day, but drug delivery to the brain is poor. This study investigated a novel therapy that may extend cognitive health to delay or treat Alzheimer's disease. The drug delivery to the brain will be more effective if sialylated Fab glycan on IgG antibody 4G8 is generated. For this study, the production of pure sialylated Fab glycan on antibody 4G8 involved the use of commercial 4G8, neuraminidase/alpha-gal, ECL column purification, and the addition of 26ST. Further testing was done using HPLC profiling to investigate the presence of glycans on the antibody 4G8. The results showed that the amount of IgG present after the treatment and purification was below the level detectable by HPLC.