

# The Effects of Beta-Hydroxybutyrate on the Effects of Beta-Amyloid in *Caenorhabditis elegans*

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Alzheimer's disease (AD) currently affects over 5 million people. As this number continues to rise, it becomes increasingly important to study AD and find therapeutic targets. The beta-amyloid peptide A $\beta$  is one such target and is widely seen as a key factor in the pathogenesis of AD. In order to further examine the role of A $\beta$ , the nematode *C. elegans* was used as a model organism to study AD. The GMC101 strain expresses human A $\beta$  in the body-wall muscles of the nematodes, presumably causing paralysis at 25°C.  $\beta$ -hydroxybutyrate (BHB) is a naturally produced ketone body that has previously been shown to have neuroprotective properties. Paralysis assays that involved treating GMC101 nematodes with BHB indicated that BHB protected the nematodes from paralysis. A concentration of 100 mM was most effective. Western blot analysis reflected that BHB may also lower the concentration of A $\beta$  oligomers. These results support the hypothesis that BHB affects the impact of A $\beta$  in *C. elegans*.