

Acetoacetate

The [ketone bodies](#), especially the [beta-Hydroxybutyric acid](#), had been shown to modulate the function of the [central nervous system](#) and prevent the pathological progression of [Alzheimer's disease](#) (AD). However, little is known about the role of [acetoacetate](#) in the AD brain. Thus, Wu et al. intraventricularly injected acetoacetate into familial AD mice (APPswe) for 14 days and monitored their [memory](#) and biochemical changes. During the behavior test, acetoacetate at 100 mg/kg led to significant improvement in both Y-maze and novel object recognition tests (NORTs) (both $P < .05$), indicating ameliorating spatial and recognition memory, respectively. Biomedical tests revealed two mechanisms were involved. Firstly, acetoacetate inhibited the GPR43-pERK pathway, which led to apparent inhibition in [tumor necrosis factor- \$\alpha\$](#) and Interleukin-6 expression in the [hippocampus](#) in a concentration-dependent manner. Secondly, [acetoacetate](#) stimulated the expression of hippocampal brain-derived [neurotrophic factor](#) (BDNF). They concluded that acetoacetate could ameliorate AD symptoms and exhibited promising features as a therapeutic for AD ¹⁾.

Pending classification

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