

# Does supplementation of $\beta$ -hydroxy- $\beta$ -methylbutyrate increase muscle mass in rats?

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## Abstract

$\beta$ -hydroxy- $\beta$ -methylbutyrate (HMB), a leucine metabolite, purportedly has positive effects on gain in strength and size of muscle cells and a positive effect on lowering plasma cholesterol levels. HMB is being sold over the counter as a dietary supplement and therefore is not regulated by the FDA. The objective of this experiment was to determine the safety and effectiveness of HMB using rats as an animal model. The data were obtained for a period of 35 days from 9 rats/group and included total body weight, weight of their gastrocnemius muscle, and total plasma cholesterol levels. The rats were male, weighing 175-199 g at the outset of the experiment. The rats were then divided into three groups. One group received 8.7 mg of HMB twice a day (manufacturer's recommended dose for humans, adjusted to rat weight); the second group received three times the amount of the first group (26.1 mg); and the last group received a dose of water. The rats were allowed Purina Rat chow and water *ad libitum*. The weights were measured every week, starting on day 1 and ending on day 35 of the experiment. The data analyzed via ANOVA show that there were no significant differences among the three groups in total body weight, gastrocnemius weights, or total plasma cholesterol levels. Hence, HMB did not have a significant effect on the parameters measured.