

## Exercise mice abstract Mayumi

**Title;**Effects of Astaxanthin  
Supplementation on  
Exercise-Induced Fatigue  
in Mice

**Author;** [IKEUCHI MAYUMI](#) (Graduate School of Marine Sci. and Technol., Tokyo Univ. of Marine Sci. and Technol.) [KOYAMA TOMOYUKI](#) (Graduate School of Marine Sci. and Technol., Tokyo Univ. of Marine Sci. and Technol.) [TAKAHASHI JIRO](#) (Fuji Chemical Industry Co., Ltd.) [YAZAWA KAZUNAGA](#) (Graduate School of Marine Sci. and Technol., Tokyo Univ. of Marine Sci. and Technol.)

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**Abstract;**The present study was designed to determine the effect of astaxanthin on endurance capacity in male mice aged 4 weeks. Mice were given orally either vehicle or astaxanthin (1.2, 6, or 30 mg/kg body weight) by stomach intubation for 5 weeks. The astaxanthin group showed a significant increase in swimming time to exhaustion as compared to the control group. Blood lactate concentration in the astaxanthin groups was significantly lower than in the control group. In the control group, plasma non-esterified fatty acid (NEFA) and plasma glucose were decreased by swimming exercise, but in the astaxanthin group, NEFA and plasma glucose were significantly higher than in the control group. Astaxanthin treatment also significantly decreased fat accumulation. These results suggest that improvement in swimming endurance by the administration of astaxanthin is caused by an increase in utilization of fatty acids as an energy source.