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ONLINE ISSN : 1880-1404 PRINT ISSN : 0916-717X

Biomedical Research on Trace Elements

Vol. 15 (2004), No. 4 370-372

[Image PDF (237K)] [References]

Effects of carnosine for the iron absorption and gastric secretion in rats

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(Accepted: November 8, 2004)

Abstract:

Iron is an essential element for all living organisms. It is a key functional component of oxygen transporting and storage molecules and of many enzymes. It is well established that the bioavailability of non-heam iron from foods is enhanced by the presence of meat. Carnosine (β -alanyl-L-histidine) is found in millimolar concentrations in the skeletal muscle and brain of animals. Carnosine was reported to act as natural antioxidants with hydroxyl-radical-scavenging and lipid-peroxidase activities. Thus, to investigate the effects of carnosine for the absorption of iron, we determined the change of serum iron concentration in rats administered ferrous sulfate and carnosine using cannulation system. We further determined the effect of carnosine for the gastric secretion in rats. The serum iron concentration in rats administered with ferrous sulfate in the presence of carnosine was significantly higher than that in rats administered rats exhibited a significant increase in pepsine activity and output. These results suggest that carnosine may facilitate the velocity of iron absorption by enhancing iron solubility.

Key words: [in Japanese]

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To cite this article:

Kaori Igarashi, Rieko Hirunuma, Hiroshige Takeichi, Shuichi Kimura and Shuichi Enomoto, "Effects of carnosine for the iron absorption and gastric secretion in rats", Biomedical Research on Trace Elements, Vol. **15**, pp.370-372 (2004).

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