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Effect of oral glutathione on hepatic glutathione levels in rats and mice.

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Abstract

Administration of oral glutathione (GSH) increases hepatic GSH levels in fasted rats, in mice treated with GSH depletors such as diethyl maleate and in mice treated with high doses of paracetamol. An increase in hepatic GSH levels after administration of oral GSH does not occur in animals treated with buthionine sulphoximine, an inhibitor of GSH synthesis. Administration of oral GSH leads to an increase in the concentration of L-cysteine, a precursor of GSH, in portal blood plasma. Oral administration of L-methionine produced a significant decrease of hepatic ATP in fasted rats, but not in fed rats. Administration of N-acetylcysteine or GSH did not affect the hepatic ATP levels. The results show that the oral intake of GSH is a safe and efficient form of administration of its constituent amino acids in cases when GSH synthesis is required to replete hepatic GSH levels.

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