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Ergothioneine, an adaptive antioxidant for the protection of injured tissues? A hypothesis.

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Abstract

Ergothioneine (ET) is a diet-derived, thiolated derivative of histidine with antioxidant properties, at least *in vitro*. Although ET is produced only by certain fungi and bacteria, it can be found at high concentrations in certain human and animal tissues and is absorbed through a specific, high affinity transporter (OCTN1). In liver, heart, joint and intestinal injury, elevated ET concentrations have been observed in injured tissues. The physiological role of ET remains unclear. We thus review current literature to generate a specific hypothesis: that the accumulation of ET *in vivo* is an adaptive mechanism, involving the regulated uptake and concentration of an exogenous natural compound to minimize oxidative damage.

Keywords

Reactive oxygen species; antioxidant; ergothioneine; adaptation; OCTN1; mushrooms

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