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Comparison of the Protective Effects of Epigallocatechin Gallate and Epigallocatechin on Paraquat-Induced Oxidative Stress

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The protective effects of (—)-epigallocatechin gallate (EGCg) and (—)-epigallocatechin (EGC) on paraquat-induced oxidative stress were compared in rat

effectively relieved decreases in food intake and body weight gain by administering the paraquat diet. The concentration of thiobarbituric substances (TBARS) in the liver of rats fed with the EGCg-added diet was lower than that of the EGC-added paraquat diet. The antioxidative enzyme activities in the liver, except for the catalase activity of the liver mitochondrial fraction, were different among the control, paraquat, paraquat+EGCg, and paraquat+EGCg diets. The catalase activity of the liver mitochondrial fraction was markedly decreased in the paraquat diets and the decrease was strongly relieved by supplementing EGCg rather than EGC in the paraquat diet. On the other hand, decreases in the cysteine and triacylglycerol concentrations that were caused by the paraquat diet were more markedly relieved by supplementing EGCg rather than EGC in the paraquat diet. These results may suggest that the gallic acid moiety of the EGCg molecule plays a key role in demonstrating stronger protective effects for paraquat-induced oxidative stress.

Keywords: [paraquat](#), [epigallocatechin gallate](#), [epigallocatechin](#), [thiobarbituric substances](#), [antioxidative enzyme activity](#)

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