

Free Radical Scavenging and Radioprotective Activities of Caffeine and Ascorbic Acids *in vivo* System

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Recently, great interest has focused on the antioxidant effects of caffeine¹. However, exact evaluation in antioxidant activities of caffeine has not been accomplished yet. The aim of this study is to compare the free radical scavenging ability of caffeine and ascorbic acid in DPPH reaction², and to evaluate the radioprotective effects of caffeine in mice. The DPPH assay showed that the free radical scavenging activity of caffeine was comparable to that of ascorbic acid. Eight-week-old male C57BL/6N mice were irradiated with 6.5 Gy. A caffeine treated group was administered with 80 mg/kg body weight by *i.p* injection, a single exposure, 1 hour before irradiation³. For histological investigation, testes were removed 2 weeks after irradiation and fixed in a neutral buffered formalin (10%). Fixed testes were processed for paraffin sections and stained by Hematoxylin-Eosin (H-E). The decrease in the weight of the body and organs and the appearance of seminiferous tubules were improved by the protective effects of caffeine or ascorbic acid against irradiation. In conclusion, caffeine injection before irradiation affects radiation-induced damage *in vivo* though the scavenging activity of caffeine is not superior to ascorbic acid.

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