

Protective effects of β -carotene against the genotoxicity of doxorubicin in somatic cells of *Drosophila melanogaster*

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ABSTRACT. β -carotene (BC), pro-vitamin A, is an efficient antioxidant, effective in the neutralization of oxygen reactive species, which cause serious damage to DNA. Various studies have been conducted on the effectiveness of BC for chemoprevention of cancer and heart disease. Doxorubicin is a chemotherapeutic agent used for cancer treatment that generates free radicals. We examined the effects of BC (1, 2 and 4 mg/mL) on the genotoxicity of doxorubicin (0.125 mg/mL), using the wing spot test in *Drosophila melanogaster* (somatic mutation and recombination test). The BC alone had no significant effect on the frequency of mutant spots. However, it significantly reduced the number of spots caused by doxorubicin. We concluded that BC is not genotoxic and that it exerts protective effects against the genotoxic action of the chemotherapeutic free-radical generator doxorubicin.

Key words: Antioxidants; Antigenotoxicity; β -carotene; SMART; *Drosophila melanogaster*; Doxorubicin