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Antigenotoxicity of Dietary Coconut Oil

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ABSTRACT

Benzo(a)pyrene, dimethylnitrosamine, methylmethanesulfonate and tetracycline induced formation of micronucleated polychromatic erythrocytes indicating that these substances are genotoxic to bone marrow cells of the experimental mice.

Genotoxicity of these substances to germ cells was also observed when low fertility index and high percentage dead implants were induced in experimental mice.

When each genotoxin was administered to mice fed with diets containing 18% coconut oil for 23 days, the formation of micronucleated polychromatic erythrocytes was greatly reduced. Antigenotoxic activity of dietary coconut oil was very much greater than dietary soybean oil.

Germ cell genotoxicity of each genotoxin was also reduced when male mice fed the 18% coconut oil diet were used. When male mice treated with the genotoxin was mated with virgin females, fertility index was increased in the group fed with coconut oil diet. Percentage dead implants was reduced. The antigenotoxic activity of dietary coconut oil on germ cells far exceeds that of dietary soybean oil.

Dietary restriction of coconut oil diets enhanced the antigenotoxic activity of coconut oil in bone marrow cells and germs cells.

Among the triacylglycerols of coconut oil, trilaurin gave the best antigenotoxic activity in bone marrow cells. Trilaurin is the major triacylglycerol in coconut oil.

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