

Carcinogens in Food: Carcinogenic Hormesis and Threshold

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< Summary >

Hormesis is defined as a biphasic dose-response relationship in which a chemical exerts opposite effects dependent on the dose, thus exhibiting a J-shape curve for its biological effects. In a medium-term rat liver bioassay for carcinogenicity, a non-genotoxic carcinogen, phenobarbital inhibited the development of diethylnitrosamine-initiated preneoplastic lesions at low doses, while high doses exhibited promoting activity showing hormesis and resulting in a carcinogenic threshold. In case of genotoxic carcinogens, there also may be the possibility for existence of carcinogenic hormesis. The carcinogenic studies supporting such view are desirable and the results will contribute to carcinogenic risk assessment in food.