

**Enhancing Effects of Indole-3-carbinol on Hepatocarcinogenesis and Thyroid Tumorigenesis in a Rat Multi-Organ Carcinogenesis Model**

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It has been reported that indole-3-carbinol (I3C), a naturally occurring compound in cruciferous vegetables, exerts anticarcinogenic activity in several organs in rodents. The modifying effects of I3C were therefore assessed using a rat multi-organ carcinogenesis model. A total of 100 male Sprague-Dawley rats were divided into 3 groups. Animals of groups 1 and 2 were sequentially treated with diethylnitrosamine (DEN; 100 mg/kg b.w., i.p.), N-methylnitrosourea (MNU; 20 mg/kg b.w., 4 times for 2 weeks, i.p.), and dihydroxy-di-N-propylnitrosamine (DHPN; 0.1% in d.w. for 2 weeks) for 4 weeks (DMD treatment). Animals of groups 1 and 3 were given the diet of 0.25% I3C for 20 weeks after DMD initiation and then were given basal diet for 28 weeks. All animals were sacrificed at week 24 and 52, respectively. I3C has been clearly demonstrated promoting effects on the development of glutathione S-transferase placental form (GST-P) positive hepatic foci at 24 weeks of the experiment. And I3C also exerted promoting potential in the hepatocellular adenoma (4/14; 29%) and the adenoma (7/14; 50%) of the thyroid gland at 52 weeks of the experiment. Therefore, I3C may promote hepatocarcinogenesis and thyroid tumorigenesis in the rat multi-organ carcinogenesis model.

**Key words :** Indole-3-carbinol (I3C), Hepatocarcinogenesis, DMD treatment, GST-P<sup>+</sup> hepatic foci, rat multi-organ carcinogenesis model.