

Phytotherapeutic Compound YHK Exerts an Inhibitory Effect on Early Stage of Experimentally-Induced Neoplastic Liver Lesions

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Xenobiotics are involved in carcinogenesis and, for instance, in clinical practice, it has been shown that the human daily intake of MeIQ_x is around 0.2– 2.6 g/subject. Besides the detection and removal of such potential carcinogenetic agents, a protective dietary approach would represent an ideal countermeasure. Indeed, on the clinical ground, contrary to many herbal remedies, our recently tested YHK phyto compound (panax pseudo-ginseng, *Eucommia Ulmoides*, polygonati rhizome, glycyrrhiza licorice, panax ginseng, Kyotsu Jigyo, Tokyo, Japan) has shown to significantly and quickly lower ALT level and steatonecrosis in HCV-related chronic liver disease patients.

The aim of this study was to investigate the effects of the herbal compound YHK on hepatocarcinogenesis induced by diethylnitrosamine (DEN) in Sprague Dawley rats. Rats were randomly divided into 3 groups and followed up for 15 weeks. Group 1 was given standard food and represented the healthy control. Liver preneoplastic foci were induced using the DEN method in groups 2 and 3 (20 rats each). However, group 3 was concomitantly given 50mg/kg/day of YHK. For quantitative assessment of liver preneoplastic foci, the placental form of glutathione-S-transferase (GST-P) positive foci were measured using immunohistochemical staining and image analysis. DEN administration caused a significant decrease in body weight and increase in liver weight while YHK prevented these phenomena. As compared to DEN-only treated rats, the YHK-given group showed a significant decrease in the number, size and volume of GST-P-positive foci.

Moreover, co-administration of YHK significantly reduced the incidence, number, size and volume of hepatocellular carcinoma. Anti-inflammatory, anti-fibrotic as well as antioxidative properties of this compound are mechanisms which are likely to be advocated for to explain its protective effect. It is concluded that herbal compound YHK by preventing hepatocarcinogenesis in DEN-induced liver preneoplastic lesions in rats has the potential to a further clinical application as a functional food.