

# The influence of propolis ethanol extract on liver microsomal enzymes and glutathione after chronic alcohol administration

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摘要

## Abstract

Propolis designates a series of gums, resins and balms of viscous consistency, which are gathered by honeybees from certain parts, mainly the buds and barks of plants, especially those found on coniferous trees. Bees bring propolis back to the hive, where it is modified and mixed with other substances including the bees' own wax and salivary secretions. In this study, the influences of propolis ethanol extract on chronic alcohol induced liver microsomal enzyme changes were investigated. Three grams of alcohol was added to rats' daily diet for four weeks to induce chronic alcohol liver injuries, and two different doses of propolis ethanol extract were p.o. administrated three times per day on the 28th, 29th, and 30th day. During the period of propolis administration, the ethanol diet was continued. After sacrifice, the rat livers were excised for assay of microsomal enzymes activity, glutathione (GSH) concentration, glutathione-S-transferase (GSTase) and  $\gamma$ -glutamylcysteine synthetase ( $\gamma$ -GCSase) activity. It was found that 30 mg/kg of propolis ethanol extract significantly prevented the elevations of total cytochrome P-450 enzymes, NADPH-dependent cytochrome C reductase, aniline hydroxylation, 7-ethoxyresorufin hydroxylation (7-ERH), 7-penthoxyresorufin hydroxylation (7-PRH), and lipid peroxidation induced by chronic ethanol administration. Additionally, propolis ethanol extract (100 mg/kg) also induced GSTase and  $\gamma$ -GCSase activities and decreased glutathione levels in the liver.