Hepatoprotective Activity of Medicinal Plants, Phyllanthus sp. in zebra fish (Danio rerio)

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ABSTRACT

Liver is an important organ actively involved in many metabolic functions and is the frequent target for a number of toxicants. Hepatic damage is associated with distortion of these metabolic functions. Acute animal exposure tests in rats, mice, rabbits, and guinea pigs have demonstrated carbon tetrachloride to have low toxicity from inhalation exposure, low-to-moderate toxicity from ingestion, and moderate toxicity from dermal exposure. There are numerous plants and traditional formulations available for the treatment of liver diseases. About 600 commercial herbal formulations with claimed hepatoprotective activity are being sold all over the world. Around 170 phytoconstituents isolated from 110 plants belonging to 55 families have been reported to possess hepatoprotective activity. However, only a small proportion of hepatoprotective plants as well as formulations used in traditional medicine are pharmacologically evaluated for their Safety. The zebra fish (Danio rerio) is a prominent model vertebrate in a variety of biological fields and biomedical research. It involves various methods to study and evaluate the chemical toxicity, drug development /discovery, and human diseases etc. Hepatoprotective activity of medicinal plant extracts P. amarus and P.emblica on zebra fish against carbon tetra chloride induced liver damage was assessed. The liver enzymes SGOT and SGPT levels were estimated in order to find the extent of liver damage and the hepatoprotective activity of the medicinal plant extracts used. The protein levels were also studied. The histopathological study was done to evaluate and validate the result obtained from the above studies. The results were found to be significant.