

## **Heen Bowitiya (*Osbeckia octandra*) Leaf Extracts Ameliorate Thioacetamide Induced Chronic Liver Fibrosis in Rats**

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Heenbowitiya (*Osbeckia octandra*) has been popularly used to treat liver disorders in traditional medical system in Sri Lanka, yet its mode of action is not known. The present study was carried out to evaluate the therapeutic potential of *O. octandra* against Thioacetamide (TAA) induced chronic liver damage in Wistar rats. Animals were intraperitoneally injected with TAA at a dose of 100 mg/ kg body weight, twice a week for five weeks to develop the disease model. Liver fibrosis was confirmed by histopathology. A significant increase ( $p<0.05$ ) of liver enzymes (AST, ALT, ALP) in the serum, liver indices, mRNA expression levels of TNF- $\alpha$ , TGF- $\beta$ ,  $\alpha$ -SMA, VEGF-R2 genes and significant decrease ( $p<0.05$ ) in body weight gains were noted. The chronic fibrotic rats were treated in 4 groups ( $n=5$ /group) with crude leaf extract (CLE) and boiled leaf extract (BLE) of *O. octandra*. Group I was continued with TAA, Group II and III received CLE and BLE respectively in the dose of 500 mg/kg body weight daily up to 10<sup>th</sup> week. Group IV was induced up to 5<sup>th</sup> week and no treatment was given thereafter to 10<sup>th</sup> week to observe natural hepatic regeneration. At the end of tenth week, all animals were sacrificed and serum and livers were recovered for analysis. Compared to Group IV, CLE and BLE treated animals had significantly decreased serum enzyme levels, liver indices and mRNA expression levels of TNF- $\alpha$ , TGF- $\beta$ ,  $\alpha$ -SMA, VEGF-R<sub>2</sub> genes while body weight gains showed significant increase ( $p<0.05$ ). Furthermore, CLE and BLE treated animals showed less granular appearance in gross pathology of livers and incomplete fibrotic bridges were obvious in histopathology. Between the two extracts, CLE proved to have a better therapeutic potential in hepatic regeneration, warranting further investigations.

**Key words:** *Osbeckia octandra*; Thioacetamide; Chronic liver damage; Rats; Leaf extract

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