

Toxicity assessment of a novel polyherbal mixture of 28-day repeated dose: A trial using Wistar Rats

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Herbal medicines are often consumed as polyherbal mixtures by people seeking conventional healthcare in the management of kidney diseases. The present study was designed to evaluate the potential toxic effects of a novel polyherbal mixture with potential nephroprotective effects. The toxic effects of the aqueous refluxed (4 hr) polyherbal mixture derived from the leaves of *Abelmoschus moschatus* Medikus., *Asparagus falcatus* L., and the whole plant of *Barleria prionitis* L. were evaluated at 200, 400 (equivalent therapeutic dose) and 600 mg/kg doses after repeated oral administration for 28 days to healthy Wistar rats (n=5/sex/group), following OECD guidelines. Samples were collected for biochemical, haematological and histological assessments. Results were analyzed statistically by one-way ANOVA. The results of renal (S. Cr; 62.21-71.56 $\mu\text{mol/L}$, BUN; 7.43-8.85 mmol/L) and liver function (ALT; 30.63-40.17 U/L, AST; 68.97-98.55 U/L, ALP; 250.89-311.91 U/L, γ -GT; 3.18-4.75 U/L) parameters, fasting blood glucose (5.42-5.57 mmol/L), lipid profile parameters (TC; 1.64-2.18 mmol/L, TG; 0.98-1.13 mmol/L, HDL; 1.05-1.22 mmol/L) and full blood count parameters of the experimental rats remained within the normal physiological range of the species ($p > 0.05$). No significant differences were observed in the relative weights of the heart, lung, liver, spleen, kidney, and small intestine in either group of rats compared to the untreated control group ($p > 0.05$). No signs of toxicity including the features of necrosis, fibrosis or inflammatory changes were observed in either group of rats during the histopathology assessment of excised vital organs. The findings revealed that the herbal mixture at the selected doses were toxicology safe *in vivo*.

Keywords: Biochemical and haematological assessment, Histology, Polyherbal mixture, Toxicity assessment

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