Abstract

The clinical use of Cisplatin (cis-diamine-dichloro platinum), as the effective anti-tumor drugs, has been limited due to the major side effects such as neurotoxicity, nephrotoxicity and hepatotoxicity. The mechanism of Cisplatin side effects are documented to the combination of multi-ways, such as the generation of reactive oxygen species. In Ayurveda, *Ficus religiosa* (FB) Linn. and *Ficus bengalensis* (FR) Linn. are belongs to a class of drugs called rasayana which are antioxidants and relieve stress in the body. In the present study, the protective effect of aqueose, methanol and ethanol extracts of FR and FB leaf was investigated against Cisplatin induced oxidative stress in the hepato, nephro and neuro systems of mice. Extract was administered daily to animals for fifteen days and Cisplatin (5mg/kg) has injected intra peritoneally (IP) on 11th day. The animals were sacrificed 24 h after the last extracts treatment. The serum, brain, liver and kidneys were removed and prepared for the biochemical investigations. Cisplatin induced toxicity by decline activities of superoxide dismutase (SOD), reduced glutathione (GSH), glutathione reductase (GR), glutation peroxidase (GPx), glutathione synthetase (GST) and Catalase (CAT). Cisplatin treatment also reduced the organs level of transaminases (ALT and AST) along with alkalin phosphatase (ALP) and also serum levels of blood urea nitrogen (BUN) and creatinine (Cr). Supplementation with FR and FB ameliorated the Cisplatin toxicity by lowering the toxicity markers in brain, liver and kidneys and increased antioxidant status by recovering the activity of SOD, CAT, GR, GST and GSH enzymes. Therefore, the results of this study showed that aqueous extract of FR and FB can be proposed to protect the brain, liver and kidney against Cisplatin induced oxidative stress. This protective effect might be correlated with its antioxidant and free radical scavenging effect of FR and FB leaves extract.

*Keywords:* Cisplatin, *Ficus religiosa, Ficus bengalensis,* oxidative stress.