IBSC

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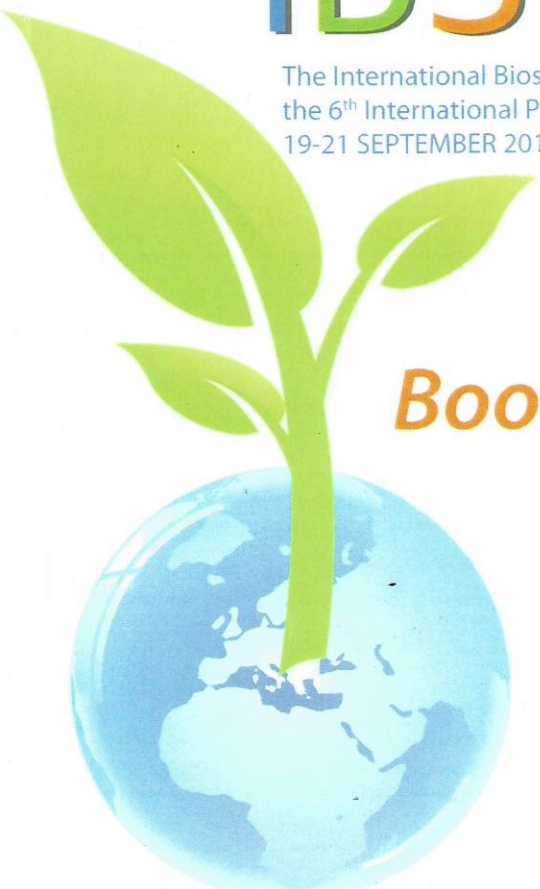

Book of Abstracts

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NEPHROPROTECTIVE EFFECT OF *SATUREJA HORTENSIS* L. AGAINST CISPLATIN-INDUCED TOXICITY

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INTRODUCTION: Despite the fact that cisplatin is one of the most effective anticancer drug, its clinical utilization is limited because of the nephrotoxicity, hepatotoxicity, and other side effects. One of the causative mechanisms of cisplatin nephrotoxicity is the generation of reactive oxygen species and/or impairment of renal antioxidant system. Our recent investigations revealed that *Satureja hortensis* L. (summer savory) extract possessed strong *in vitro* antioxidant activity. This prompted us to investigate the potential protective effect of *S. hortensis* on attenuation of cisplatin-induced nephrotoxicity.

OBJECTIVES: This study was designed to investigate the protective effect of methanolic extract of summer savory against cisplatin-induced nephrotoxicity and renal dysfunction in rodents.

METHOD / DESIGN: Experiment was done on 36 adult male Wistar rats divided randomly into six groups (n=6). The animals were received extract at three different concentrations (50, 100 and 200 mg/kg body weight), for ten days. Nephrotoxicity was induced by intraperitoneal administration of cisplatin (7.5 mg/kg b.w.) on the 5th day of the experiment. Positive (cisplatin), negative (water) and extract (200 mg/kg b.w.) controls were also analyzed. The evaluation of functional and structural alterations in the kidneys of treated rats was performed by biochemical and histopathological analyses.

RESULTS: It was observed that the cisplatin treatment induced significant elevations ($p<0.05$) in serum urea, uric acid and creatinine concentrations. On the other hand, the treatment with extract significantly reduced the level of serum parameters, as compared to the cisplatin group. Also, our results showed that extract at all tested concentrations provided significant increase in superoxide dismutase and catalase activities and lowered the level of thiobarbituric acid-reactive substances. No changes in

serum parameters and tissue antioxidant markers were observed in the group treated with extract only, as compared to the control group. Histopathological study revealed the normal renal architecture in the negative and extract control groups, while treatment with cisplatin induced atrophy, desquamation, and hydrophic degenerescence in the tubular epithelium. Additionally, histopathological examination showed that *S. hortensis* markedly ameliorated cisplatin-induced damage in renal tissue.

CONCLUSIONS: The results of our research suggest that *S. hortensis* reduced nephrotoxicity caused by cisplatin and could be considered as prospective agent in therapy of renal disorders. Extensive further studies are necessary to explore the exact mechanism of *Satureja hortensis* in nephroprotection.

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