



**NATIONAL SYMPOSIUM ON  
EMERGING TRENDS IN BIOTECHNOLOGY:  
PRESENT SCENARIO AND FUTURE DIMENSIONS**

(Sponsored by UGC, New Delhi and DST-PURSE, Govt. of India)

**29<sup>th</sup> – 30<sup>th</sup> March, 2014**

*Abstracts*

*Organized by*

**Post Graduate Department of Biotechnology**

Utkal University,

Bhubaneswar - 751 004, Odisha, India



**Abstract: 045****Expression of antioxidant enzymes in cardiac tissue of deoxycorticosterone acetate (DOCA)-salt induced hypertensive rat: Effect of homoeopathic preparations of *Rauwolfia serpentina*****S. Kumar<sup>1</sup>, A. K. Hati<sup>2</sup>, G. B. N. Chainy<sup>1</sup>, L. K. Nanda<sup>2</sup>, J. Dandapat<sup>1</sup>**<sup>1</sup>P.G. Department of Biotechnology, Utkal University, Bhubaneswar-751004, Odisha, India.<sup>2</sup>Dr. A.C.H. Medical College and Hospital, Bhubaneswar-751001, Odisha, India.<sup>\*</sup>E-mail: sandeepgenome@gmail.com

Cardiovascular disease is a major health problem across the world accounting for about 30% of all deaths. Hypertension is a major risk factor for cardiovascular diseases and excessive reactive oxygen species (ROS) generation is involved in a variety of cardiovascular diseases including inflammation in cardiovascular system, cardiac hypertrophy and other cardiac diseases. *Rauwolfia serpentina* has been used in Ayurvedic and Homoeopathic medicines for the treatment of hypertension. *Rauwolfia serpentina* Q is the most commonly used drug for hypertension by the homoeopaths. In the present study we evaluated the effect of different potencies (Q, 30C and 6C) of homoeopathically prepared *Rauwolfia serpentina* on antioxidant defence system in heart tissue of deoxycorticosterone acetate (DOCA)-salt induced hypertensive rats. Hypertension was induced in unilaterally nephrectomized adult male Wistar rats by injecting DOCA (25 mg/kg BW) subcutaneously twice in a week and 1% NaCl in drinking water. The DOCA-salt induced hypertensive rats showed significant increase in systolic blood pressure, diastolic blood pressure, heart rate and heart weight. After induction of hypertension, rats were treated with different potencies of *Rauwolfia serpentina* orally three times a day for five weeks. Administration of *Rauwolfia serpentina* showed reduction in systolic and diastolic blood pressure, serum hepatic, cardiac and renal markers. There was significant decrease in lipid peroxidation (LPx) and protein carbonylation (PC) in *Rauwolfia serpentina* treated groups than the sham operated and DOCA-salt hypertensive groups. Superoxide dismutase (SOD), catalase (CAT), Glutathione peroxidase (GPx) and glutathione reductase (GR) activities and transcript level were decreased in *Rauwolfia serpentina* treated groups than the control and hypertensive groups. These results suggest that *Rauwolfia serpentina* acts as an antihypertensive drug against DOCA-salt induced hypertension and can modulate antioxidant defence components in the rat heart.