

Protective effect of Phloridzin on lipid peroxide metabolism in isoproterenol induced myocardial infarction in male wistar rats: A Histopathological study

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From National Conference on Interdisciplinary Research and Innovations in Biosciences, NATCON -2018. Post Graduate & Research Department of Biochemistry, Mohamed Sathak College of Arts & Science, Sholinganallur, Chennai-600119, India. 24th & 25th January 2018.

American J of Bio-pharm Biochem and Life Sci 2018 January, Vol. 4 (Suppl 1): OP03

ABSTRACT

This study aims to evaluate the preventive effect of Phloridzin on lipid peroxides, enzymatic and non-enzymatic antioxidants and histopathological findings in isoproterenol (ISO) induced rats. Myocardial infarction (MI) is induced in rats by subcutaneous injection of ISO (100 mg / kg body weight) at an interval of 24 h for 2 days. ISO - treated rats show a significant increase in the levels of thiobarbituric acid reactive substances, lipid hydroperoxides in plasma and heart and plasma uric acid and a significant decrease in the activities of superoxide dismutase, catalase, glutathione peroxidase, glutathione reductase, glutathione-s-transferase in heart and the levels of reduced glutathione, Vitamin C and vitamin E in plasma and the heart and ceruloplasmin in plasma. Oral pretreatment with Phloridzin (10,20,30mg / kg body weight) daily for a period of 21 days show significant decrease in the levels of lipid peroxidation products and uric acid and improved the antioxidant status by increasing the activities of antioxidant enzymes and non-enzymatic antioxidants. Histopathological findings of the myocardial tissue show the protective effect of Phloridzin in ISO- induced rats. The effect at a dose of 30 mg/ kg of Phloridzin was more pronounced than that of the other two doses (10 and 20mg / kg body weight). Thus, the present study reveals that Phloridzin exerts cardioprotective effect against ISO- induced MI due to its free radical scavenging and antioxidant effects, which maintains the tissue defence system against myocardial damage.