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Pretreatment with morin, a flavonoid, ameliorates adenosine triphosphatases and glycoproteins in isoproterenol-induced myocardial infarction in rats

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The aim of this investigation was to evaluate the preventive role of morin, a flavonoid, on cardiac marker enzymes such as aspartate transaminase, lactate dehydrogenase, creatine kinase and creatine kinase-MB, membrane-bound enzymes such as sodium potassium-dependent adenosine triphosphatase, calcium-dependent adenosine triphosphatase and magnesium-dependent adenosine triphosphatase, and glycoproteins such as hexose, hexosamine, fucose and sialic acid in isoproterenol (ISO)-induced myocardial infarction (MI) in rats. Male albino Wistar rats were pretreated with morin (20, 40 and 80 mg/kg) daily for a period of 30 days. After the treatment period, ISO (85 mg/kg) was subcutaneously injected into the rats at an interval of 24 h for 2 days. ISO-induced rats showed significantly ($P<0.05$) increased activities of cardiac marker enzymes in serum and decreased activities in the heart, and increased activities of calcium-dependent adenosine triphosphatase and magnesium-dependent adenosine triphosphatase in the heart, and the activity of sodium potassium-dependent adenosine triphosphatase decreased in the heart. ISO induction also showed a significant increase in the levels of glycoproteins in serum and the heart. Pretreatment with morin (40 mg/kg) daily for a period of 30 days exhibited significant ($P<0.05$) effects and altered these biochemical parameters positively compared to the other two doses. Thus, our study shows that morin has a protective role in ISO-induced MI in rats. The observed effects might be due to the free radical-scavenging, antioxidant and membrane-stabilising properties of morin.

Biography

G Chandramohan has completed his Ph.D. at the age of 28 years from Annamalai University, Tamil Nadu, India and now he is working as an Assistant Professor in the Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia. During his doctoral program, he has isolated a novel antidiabetic compound from the south Indian medicinal plant and he has patented his invention and patent was granted recently by IPR, India (Patent Grant No. 243139). Senior Research Fellowship and University Research Studentship have been awarded for his doctoral research by Indian Council of Medical Research and Annamalai University respectively.

G Chandramohan is very active in participation in scientific meeting in abroad. He has also served as a Session Chair Person and organizing committee member for the 1st International Conference on Diabetes & Metabolism held in California, USA (2010) and 2nd World Congress on Diabetes & Metabolism held in Philadelphia, USA (2011). He has published a good number of papers in reputed journals. He is serving as an editorial board member and reviewer in reputed journals. He is also evaluator for the Indian government scientific projects. Recently, he has completed two major research projects on "Role of camel milk in diabetes mellitus & Morin, a flavonoid on myocardial infarction".

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