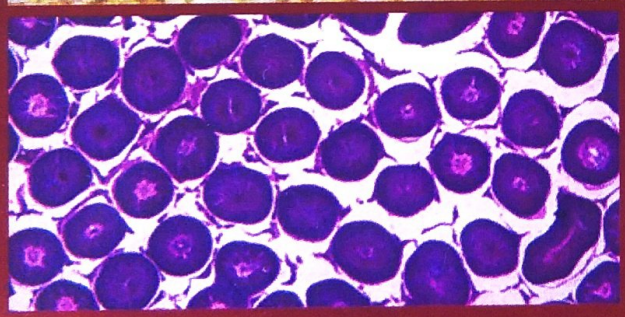
ROLE OF ANIMAL SCIENCES IN NATIONAL DEVELOPMENT

Volume - 2

Biotechnology for Human Welfare



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Chapter - 26

PRE-DOMINANT TOXICITY OF ACRYLAMIDE AND THERAPEUTIC ROLE OF NARINGENIN AGAINST ACRYLAMIDE IN RATS

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Abstract:

In present study, rats were administered acrylamide (40mg/kg) for 05 days, followed by oral administration of at doses of 10, 20, 30mg/kg for 05 days. Animals of all groups were sacrificed after 24 h of last treatment. SerumAST(aspartate aminotransferase), ALT(alkaline aminotransferase), urea, uric acid, GGT, creatinine, total bilirubin, direct bilirubin, and body weight parameters were performed. Treatment with naringenin ameliorated toxicity of ACR and studied parameters were reversed towards control level. Thus, it may be postulated that naringenin possess excellent therapeutic potential against acrylamide induced hepatic and renal toxicity.

Keywords: Acrylamide, naringenin, toxicity, parameters, serum.

Introduction:

Acrylamide (C_3H_5NO) is a well known compound, which is white, odourless water soluble crystal, also soluble in ether and chloroform (Kahkeshani *et al.*, 2015). Scientific research has concluded Maillard reaction as the main pathway of acrylamide formation (Teodar *et al.*, 2011), However it is also produce through lipid oxidation processes (Hidalgo *et al.*, 2010). Acrylamide is formed by the reaction of asparagine and reducing sugar at high temperature(Taha *et al.*, 2013). Acrylamide is a major neurotoxicant, reproductive toxicant, and genotoxicant in laboratory animals (Song *et al.*, 2014). It is suggested from previous research findings that acrylamide administration may produce hepatorenal toxicity in rat at