

ROLE OF ANIMAL SCIENCES IN NATIONAL DEVELOPMENT

Volume - 5

# Recent Trends in Animal Sciences



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## CHAPTER - 11

# NARINGENIN ABROGATES ALUMINUM INDUCED ALTERATIONS IN LIVER AND KIDNEY

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### ABSTRACT

A study was undertaken to evaluate therapeutic potential of naringenin at three different doses against aluminum (Al; 32.5 mg/kg) induced alterations. Aluminum intoxication significantly reduced HGB, RBCs, WBCs, HCT, PLT, MCV and MCHC. Significant enhancement in AST, ALT, LDH, GGT, ALP, urea and creatinine whereas decrease in albumin was found in serum after Al exposure. Aluminum intoxication increased LPO, GSH, GSSG, CAT, GR, GPx, GST and SOD in liver and kidney. Treatment of naringenin was found to be effective against aluminum induced alterations in hematology and cellular biochemistry in liver and kidney in a dose dependent manner.

**Keywords:** Aluminum; Naringenin, Liver; Kidney; Antioxidant pool

### 1. Introduction

Aluminum (Al) is one of the most ubiquitous metals in the earth's crust. Human being is exposed to Al by both natural as well as anthropogenic sources, including food, medicines, drinking water and industrial effluents (Ochmanski and Barabasz, 2000). Its accumulation cause toxic effects to a variety of organs, including brain, bone, liver, kidney, blood and heart (Oteiza *et al.*, 1993; Gonzalez *et al.*, 2009). Increased Al burden also causes neurological symptoms, biochemical responses leading to unhealthy bone metabolism and learning disabilities in children (Ferreira-Moyano and Barragan, 1994), alterations in concentration of essential trace elements