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Reversal of acryl amide-induced toxicity by kaempferol therapy in rats

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Kaempferol is a natural flavonol, a type of flavonoid that has been isolated from broccoli, grapefruit, cabbage, tomato, grapes and apples. Acryl amide (AA) is an industrial chemical with neurotoxic, carcinogenic effects in humans and has been known as an occupational hazard for decades. However, in recent years, AA has been found to form in fried and baked starchy foods like potato chips, French fries etc during cooking. The aim of the present study was to evaluate the therapeutic efficacy of Kaempferol against AA induced toxicity in rats. AA was administered at the dose of 19.13 mg/Kg for 28 days to albino rats followed by therapy with 20 mg/Kg dose of Kaempferol. The various toxicity symptoms were observed which include significant reduction of body weight, hair loss, hind-limb splaying, dragging of back legs and irritation on skin. There was significant elevation in the level of AST, ALT and ALPase with reduction in levels of hemoglobin and blood ALAD and ALAS in brain after AA exposure. Activities of acetyl cholinesterase, GST, GR and GPx were also declined in AA treated groups as compared to control group. After AA intoxication, activities of drug metabolizing enzymes (AH, AND, CYT P-450) were depleted with increase in G-6-PDH, microsomal lipid peroxidation and also induced DNA damage. Histo-pathological observations also supported biochemical studies. Kaempferol has a therapeutic potential for the protection of AA induced toxicity to prevent harmful effects.

Biography

Sadhana Shrivastava completed her PhD from Jiwaji University and Post-doctoral studies from the same University. She has published more than 40 papers in reputed journals and books. She has been awarded many national fellowships. She has presented papers in international conferences.

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