RESEARCH PAPER

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Regenerating activity of *Citrus aurantifolia* on paracetamol induced heaptic damage

K. GOKULAKRISHNAN[1], P. SENTHAMILSELVAN[1] AND V. SIVAKUMARI[2]

[1]Department of Biochemistry, Marudu Pandiyar College, THANJAVUR (T.N.) INDIA

[2]Department of Environmental and Herbal Sciences, Tamil University, THANJAVUR (T.N.) INDIA

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Liver regulates many important metabolic functions. Hepatic injury is associated with distoration of these metabolic functions. Thus liver disease remains one of the serious health problems. Inspite of tremendous studies in modern medicine, there are not much drugs available for the treatment of liver disorders. In the present study, paracetamol was used to induce the hepatic damage. Paracetamol, is a widely used analgesic and antipyretic drug. Oxidative stress is reported to play an important role in the pathogenesis of paracetamol – induced liver damage. The result confirm that *Citrus aurantifolia* possess a potential hepatoprotective activity.

Key words : Liver, paracetamol, *Citrus aurantifoli*a and phytochemicals.

INTRODUCTION

Liver is the largest gland in the human body and one of the most complexes of all human organs. It serves as the body main chemical factory and is one of its major store houses of food. The liver is a reddish – brown mass weighing about 3 pounds (1.4kg). It is located in the upper right part of the abdomen under the diaphragm and above the stomach and intestines.

The liver has a remarkable ability to produce new cells to replace its own diseased or damaged cells. For example surgeons can remove a section of healthy liver from an adult transplant it into a child who has a diseased liver. The adult's liver will rapidly regenerate and be restored to full size. The child's new liver will grow as the child grows (Lewis and Zimmerman, 1989).

The blood carries these nutrients as well as vitamin, minerals and fatty acids and glycerol to the liver. The liver removes the excess glucose from the blood and stores it in the form of a starch like compound called glycogen. Glucose serves as the chief fuel for the body's cells. When the body needs energy the liver convert's glycogen to glucose and releases it into the blood, the liver also converts fatty acids and amino acids into glucose when its storage of glycogen is low (Jones *et al.*, 1996).

The liver also plays an essential role in the storage of certain vitamins. The liver stores vitamin A as well as vitamin D, E and K and those of the B complex group. It also stores iron and other minerals. Liver cells filter harmful substances from the blood. Such substances include insecticides, drugs, food additives and industrial chemicals. Enzyme in the liver cells converts some of these substances into products that dissolve in water (Werth *et al.*, 1993).

The juice of the lime is regarded as an antiseptic, tonic, an antiscorbutic, an astringent, and as a diuretic in liver ailments, a digestive stimulant, a remedy for intestinal hemorrhage and hemorrhoids, heart palpitations, headache, convulsive cough, rheumatism, arthritis, falling hair, bad breath, and as a disinfectant for all kinds of ulcers when applied in a poultice. The leaves are poultice on skin diseases and on the abdomen of a new mother after childbirth. The leaves or an infusion of the crushed leaves may be applied to relieve headache. The leaf decoction is used as eye drops and to bathe a feverish patient; also as a mouth wash and gargle in cases of sore throat and thrush. The root bark serves as a febrifuge, as does the seed kernel, ground and mixed with lime juice. In the West Indies, the juice has been used in the process of dyeing leather. The dehydrated peel is fed to cattle. In India, the powdered dried peel and the sludge remaining after clarifying lime juice are employed for cleaning metal. The hand-pressed peel oil is mainly utilized in the perfume industry. Lime juice dispels the irritation and swelling of mosquito bites.

In the present study paracetamol was chosen to induce liver damage for evaluation of hepato protective activity. To assess the MDA, GSH content, SGOT, SGPT activity, Albumin level, protein content, vitamin E and Vitamin C to evaluate the liver damage of the above biochemical parameters are used to assess the hepatoprotective activity of plant.