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Investigation of Immunomodulatory Potential of Hydro-Alcoholic Extracts of *Euphorbia neriifolia* Linn. and *Hibiscus rosa sinensis* Linn.

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ABSTRACT

The assesement of immunomodulatory activity of hydro-alcoholic extracts of dried leaves of *Euphorbia neriifolia* Linn. (100, 200 and 400 mg/kg, p.o.) and dried flowers of *Hibiscus rosa sinensis* Linn. (75, 150 and 300 mg/kg, p.o.) were done by carbon clearance method, haemagglutination antibody titre method and footpad swelling method on wistar albino rats. Results of present studies suggest that the hydro-alcoholic extract of *Euphorbia neriifolia* Linn. was found to be more efficacious action on immune components on animals than hydro-alcoholic extract of *Hibiscus rosa sinensis* Linn. in dose dependent manner when compared with control group.

Key words : Carbon clearance method, cellular immune response, haemagglutination antibody titre.

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The immune system is involved in the etiology as well as pathophysiologic mechanisms of many diseases. Modulation of the immune responses to alleviate the diseases has been of interest for many years and the concept of 'rasayana' in Ayurveda is based on related principles[1]. Indian medicinal plants are a rich source of substances which are claimed to induce paraimmunity, the non-specific immunomodulation of essentially granulocytes, macrophages, natural killer cells and complement functions[2]. Ayurveda, the Indian traditional system of medicine, lays emphasis on promotion of health concept of strengthening host defences against different diseases[3]. These plants, labelled as 'rasayana', have been endowed with multiple properties like delaying the onset of senescence and improving mental functions by strengthening the psycho-neuro-immune axis[4].

Hibiscus rosa sinensis *Linn. (Family:* Malvaceae*)* known in Sanskrit as Japa or Rudhrapushpa and the flowers have been reported in the ancient Indian medicinal literature with beneficial effects in heart diseases[5]. The flowers are refrigerant, emollient, demulcent and aphrodisiac; also emmenagogue. Petals are used to stimulate thicker hair growth and to prevent premature graying, hair loss and scalp disorders. It acts as a natural emollient hair conditioner and can be used in hair washes, treatments and vinegar rinses for the hair. Leaves are emollient, anodyne and aperient or laxative. Hibiscus is useful in menorrhagia, strangury, cystitis and other conditions of the genito-urinary tract[6]. These chemical constituents were reported in plant *i.e.* cyanidin, quercetin, flavonoids, hentriacontane, thiamine, riboflavin, niacin and ascorbic acid[7].

Euphorbia neriifolia Linn. (*Euphorbiaceae)* grows luxuriously around the dry, rocky, hilly areas of North, Central and South India. It is a herb full of spine, popularly known as Sehund, Thohar and Milk Hedge. The leaves are thick succulent, 6-12 inch long, ovular in shape. In the traditional system leaves are used as aphrodisiac, diuretic, cough and cold, and also used in the treatment of bronchitis, bleeding piles, ano-rectal fistula. The tribal population of Chattishgarh region uses the milky latex as an ingredient of aphrodisiac mixture. Latex is used to de-root skin warts, earache and in arthritis[8]. The aqueous extract of the latex of *Euphorbia neriifolia* facilitated the wound healing process as evidenced by increase in tensile strength, DNA content, epithelization and angiogenesis[9]. Plants is bitter, laxative, carminative, improves appetite, useful in abdominal troubles, bronchitis, tumors, leucoderma, piles, inflammation, enlargement of spleen, anemia, ulcers, fever and in chronic respiratory troubles[10-12].

Phytochemical investigations on