ACUTE SYSTEMIC TOXICITY TEST ON LOTUS GARCINII D.C.

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ABSTRACT
The different extracts of Lotus garcinii was subjected to the toxicological investigation with special reference to acute systemic toxicity in experimental animals displayed that it elicit sever toxicity. The symptoms of toxicity were breathing problem with idleness, mild erection of hairs. Lotus garcinii extracts are capable of producing toxic reactions.

INTRODUCTION
The genus Lotus belongs to the family Fabacae (Leguminosae) and it has 60–100 species, most numerous around the Mediterranean and are represented in Pakistan by four species. Their names are Lotus garcini, Lotus schimperi, Lotus makranicus and Lotus corniculatus. Lotus garcini is a perennial, woody at the base, branches many, silky pubescent. Leaves are 3 or 5 foliolate, leaflets 5-9 mm long 4-5 mm broad, obviate cuneate, obtuse or retuse, grey pubescent on both sides or glabrous above, pilose below. Flowers are solitary axillary, sessile. Fruits 9-12 mm long glabrous or pubescent, linear, straight 6-seeded. Widely distributed in Pakistan, Iran Oman, Saudi Arabia, Egypt and Islands of Socotra (Nasir et al., 1977). Literature survey indicated that some species of Lotus exhibit CNS stimulant, strengthens systolic contraction, hemaglutinating and macrophage activities on experimental animals (Lerman, 1933, Leu et al., 1985 and Dam, 1992). The objective of present study is to determine the acute systemic toxicity in mice, which is been tried before.

Acute Systemic Toxicity Test
Toxicity reactions of Lotus garcinii extracts have been studied in healthy living albino mice. The animals were housed in an air-conditioned animal house and were fed on pallets and water. The animals were not previously used for test. The test samples were prepared from ethanol, hexane, ethylacetate, butanol and aqueous extracts of the whole plant of Lotus garcinii. Each group comprised of 5 albino mice.

MATERIALS AND METHODS
Materials
- Male albino mice, weighing between 17-23 gm.
- Mice trap
- Disposable Insulin Syringes 1 ml.
- Ethanol
- Injectable Normal Saline Solution
- 0.2µ Membrane filter
- Filtration assembly

Control Solution
Injectable Normal Saline Solution was used as control solution

Procedure for Injection
- Healthy male mice were weighed on electric balance individually.
- Mice were fixed into the trap in a position that the tail was set free.
- The tails were disinfected with 70% ethanol. By using insulin syringes 1.0ml/20gm body weight, test solution
was injected intravenously into the vein of the tail of each mice. Time of the injection occupied about 15-30 second. Control solution was also injected intravenously into the vein in the same manner as carried out for the test solution.

Mice groups were transferred in different cages and marked with their identification.

**INTERPRETATION OF RESULTS**

Animals were observed immediately after injection. Again 4 hours after injection and then at 24 hours 48 hours and after 72 hours.

Biological reactivity includes erection of hairs, skin diseases, difficulty in breathing, and other abnormal activities and gross behavioral effects were observed. The test results are given in Table-1.

**RESULTS AND DISCUSSION**

Plants have been a source of medicinal compounds since pre-historic time. All parts of plants were used in *Ayurvedic, Tibbi, Unani* and Allopathic systems of medicine for the treatment of number of human ailments. Such as wound, infections, typhoid, dysentery and number of skin diseases.

A resurgence of interest in the study and use of medicinal plants is taking place during the last three decades. A considerable growth has occurred in official and commercial interest in the use of herbal products (Akerele, 1992). In recent years there has been a growing trend to evaluate the bioactivity of the medicinal plants, so that a

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Observation after</th>
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<tr>
<td></td>
<td>Immediately</td>
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<tr>
<td>Ethanol Extract</td>
<td>Breathing problem with idleness</td>
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<td>n=5</td>
<td></td>
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<tr>
<td>Hexane Extract</td>
<td>Breathing problem with idleness</td>
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<td>Ethyl acetate Extract</td>
<td>Breathing problem with idleness</td>
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<tr>
<td>Butanol Extract</td>
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<tr>
<td>Aqueous Extract</td>
<td>Normal activity</td>
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<tr>
<td>Control</td>
<td>Normal activity</td>
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systemic approach could be adopted for their therapeutic utilization. The present study is an attempt to evaluate the acute systemic toxicity of *Lotus garcinii*. The acute toxicity was determined in albino mice by employing Pharmacopoeial test method for toxicity assessment (Anonymous 1990 and 1993). Doses of the extracts and control solutions were given in a group of 5 mice each. The intravenous route was selected for the administration of the whole plant extracts of *Lotus garcinii*. After intravenous administration of the extracts and control solution, animals were observed for biological reactivity, which includes erection of hair, skin diseases, breathing conditions, any other abnormal activities and gross behavioral effects. Observations were made immediately just after the administration of every extract, 4 hours, 24 hours, 48 hours and finally after 72 hours. The recorded results are shown in Table-1.

Results of whole plant extracts of *Lotus garcinii* revealed that ethanol, hexane, ethyl acetate and butanol extracts just after administration produced its effects and as a result animals started facing difficulty in breathing and their agility have remarkably reduced. It was noted that animals injected with ethanol, ethyl acetate and butanol extracts recovered after 4 hours and resumed their normal activity throughout the evaluation period. The animals given hexane extract exhibited difficulty in breathing and movement comparatively for longer period than the ethanol, ethylacetate and butanol extracts. The animals administered hexane extract, responded abnormal behavior and after 24 hours became normal but after 72 hours symptoms of toxic reaction appeared and animals developed mild erection of hairs. Animal injected aqueous extract exhibited no abnormal activity just after the administration of drug but after 4 hours idleness in the animals developed which continued and later after 48 hour the animals became normal.

Therefore it is concluded that the present study have produced the evidences of toxic reactions is the albino mice. Consequently it can be inferred that the whole plat extracts of *Lotus garcinii* are capable of producing reactions.

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REFERENCES