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Hypoglycaemic effect of jellyfish, *Chrysaora quinquecirrha*, Desor (1848) in normal and alloxan induced diabetic mice

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Background: *Diabetic mellitus* is a metabolic disease associated with impaired glucose metabolism, which in effect alters intermediary metabolism of lipids and proteins adversely. The present study was conducted to study the anti-hyperglycemic activities of extracts of *Chrysaora quinquecirrha* extract in mice as well as to provide an introductory approach for the evaluation of its traditional preparation in order to scientifically validate the therapeutic preparation of this extract in the control of diabetes.

Objective: The present investigation pertains to the evaluation of hypoglycaemic activity of extracts of jellyfish, *Chrysaora quinquecirrha*, collected from Vellar estuary, south east coast of India.

Methodology: The nematocyst extracts of the tentacles of jellyfish were characterized for protein contents and their hypoglycaemic effect.

Results: Jellyfish *C. quinquecirrha*, caused glycaemic alteration in fasting mice. Intravenous administration of the extract produced a significant rise followed by a significant fall in blood sugar level. Preliminary separation on Sephadex G50 indicated the hypoglycaemic factor to be a non-lethal protein of molecular weight less than 20 kDa. Heat treatment of extract and G50 separated fraction F3 demonstrated total loss of hypoglycaemic activity.

Conclusions: Marine organisms are considered to be an inexhaustible source of chemical compounds that produce a wide variety of biologically active secondary metabolites. Scyphozoan jellyfishes have become an important target for the biotechnology industry because of the large number of bioactive compounds recently discovered from them. This paper focuses on the hypoglycaemic potential of marine species with certain pharmaceutical interest, which could confer anti-diabetic activity.

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Red Sea environment and pollution hazards

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Red Sea has special environments containing coral reefs and mangroves. The resources at the coastal area of the Red Sea provoked many development projects. The projects vary between mining, ports, oil and gas, tourism, new factories etc. The pollution expected from these projects varies according to the sources. The pollution detected in the Red sea still in the permissible limits but not controlled. More control from the government is needed to prevent hazards affecting the environment.

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