بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

Biochemical, Hematological and Antitumour Studies on The Crude Venom of the Oriental Catfish, *Pl* *lineatus, In Vivo*

Thesis
Submitted
By

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(B.Sc.1988 & M.Sc. 1994 Biochemistry)

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To the memory of my father

Biography

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Abstract

Biochemical, Hematological and Antitumour Studies on the Crude Venom of the Oriental Catfish, *Pl. lineatus*, *In Vivo*

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The oriental catfish, *Plotosus lineatus*, is one of the most dangerous venomous fishes known in Red Sea and Suez Gulf. This work is the first trial recording the most important enzymes in the crude skin secretion of the oriental catfish i.e. cholinestrase, hyaluronidase, phospholipase A_2 and other as well as some biological properties i.e. hemolytic , edema-forming activities and ichthyotoxcitiy. Also, this study aimed at investigating the antitumour activity of the crude skin secretion against solid Ehrlich carcinoma. Gel fractionation of the crude skin toxin on sephadex $G_{75\text{-}120}$ gave three main fractions. The LD_{100} and LD_{50} values were found to be 41.8 µg and 27.9 µg/g b.w., respectively, in mice, while no lethality among animals was detected regarding the three isolated fractions (up to 1600 µg/g b.w). Treatment of tumoured animals with the crude skin secretion resulted in an increase in the life span of mice (ILS % 238.8 %), tumor growth rate (T/C % 27), the tumour growth delay time (T-C) value was 20 days and reduction in the tumour weight was 1.35 g only compared to untreated tumoured controls (5 g). A total number of 200 adult female Swiss albino mice were divided into four main groups: Gr. I NC (normal controls, 60 mice), Gr. II N-tr. (Normal-treated, 60 mice), Gr. III T (Tumored, 20 mice) and Gr IV T-tr. (Tumored-treated, 60 mice). Gr.II and IV received an i.p injection of the crude skin toxin every other day throughout the experimental period (9 weeks). Gr. I and III did not receive any treatment. Animals of Gr II (N-tr) showed non significant changes in most studied biochemical parameters of serum and liver throughout the experimental periods and a significant increase in the mean spleen weight was recorded. Mice of Gr. III (T) showed a significant increase in the spleen, liver and heart weights, a significant increase in serum total cholesterol and triglycerides levels, serum AST, LDH, CK and G-6-PDH activities, liver total lipids, liver ALT, AST, G-6-Pase and 5' Ntase activities. Significant reductions were observed in serum glucose, total protein, albumin, globulin and blood Hb levels, serum ALT activity and liver glycogen content. Gr. IV (T-tr) revealed a significant

amelioration in the studied serum and liver biochemical parameters as most of them returned back to normal after nine weeks. Histopathological studies of the tumour tissue indicated a mild , moderate then severe increase in necrotic cells, degenerative changes and reactive cells during the experimental period in Gr. IV (T-tr) with a significant decrease in the mitotic figure, compared to the tumour of Gr. III (T). Liver sections showed non significant changes in all studied groups after three weeks, yet dysplastic changes and mild hepatitis were recorded in treated animals after six and nine weeks, respectively.

Key words: *Plotosus lineatus*, Skin toxin, Fractionation, Enzymes, Solid Ehrlich carcinoma, Mice, Serum, Liver

Contents

Tumour Studies

Serum and Tissue Studies