EFFECTS OF BOTH WHOLE VENOM AND VENOM FRACTIONS OF *Scolopendra viridis* Say, 1821 ON MUSCULAR AND NERVOUS TISSUE IN MOUSE

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Introduction. *Scolopendra viridis* Say,1821 is a poisonous arthropod widely distributed in Mexico; its bite produces burning pain, paresthesia and edema, among other symptoms (1). Venom of centipedes (genus Scolopendra) has been used in traditional medicine in countries such as China, Korea, India and Mexico to treat arthritis, epilepsy, headaches and infections (2-4).

The main goal of this investigation is the evaluation of the effects of *S.viridis* venom on muscular and nervous tissue.

Methods. Whole venom was obtained by mechanical or electrical stimulation (16 V) of the centipede, lyophilized and quantified (Lowry method). Then, it was injected to CD1 female mice intramuscularly (a dose per day, 1, 3 or 5 days) prior to the hot plate test. Paw withdrawal latencies (PWL; 45°C) were recorded and compared to control (NaCl, 0.9%). Skeletal muscle and nervous tissue samples were analyzed for morphological modifications. Alternatively venom fractions were obtained by high-performance liquid chromatography and by anionic exchange chromatography, to be administered in mice. A statistical analysis was applied (ANOVA) to find significant differences between treatments.

Results. Whole venom evoked a PWL decrease in all cases, 45 min after injection (left hindpaw). Furthermore, histological modifications were detected at the administration area; i.e. edema, skeletal muscle breakdown and nerve compression not evidenced in the control groups (Figure 1). Chromatographic profiles are shown in Figure 2.

Conclusions. Intramuscular administration of whole venom of *S.viridis* produces alterations in thermal tolerance in mice. Furthermore, it produced histological changes in the area of injection.

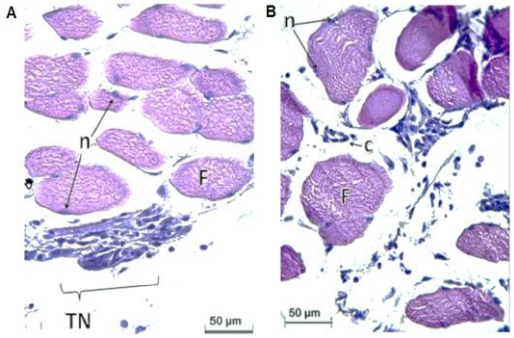

Fig.1 Muscle sections (5µm). **A**: 3 days of whole venom injection (75µg). **B:** 5 day injection (125µg; H&E staining, 40x optical zoom). TN= nerve; n=nuclei; F=muscle fiber.

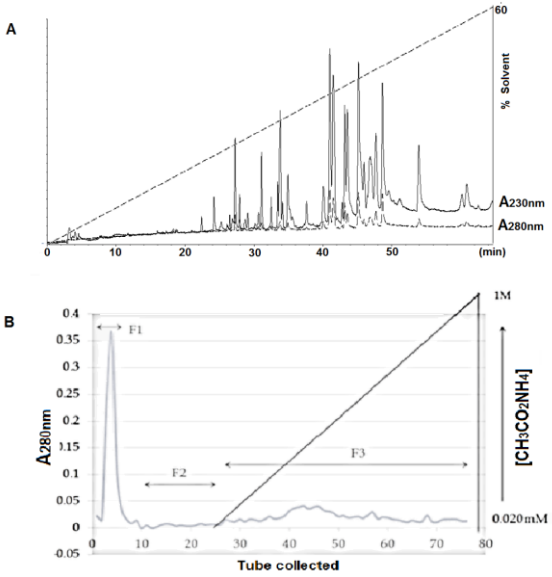

Fig. 2.A: HPLC separation of whole venom (C-18 column; linear gradient from 0-60% 0.10% TFA in acetonitrile; flow rate of 1ml/min; 300 µg sample). **B.** Anionic exchange whole venom separation (DEAE-sepharose column; 800 µg venom; gradient: 0.02-1 M $CH_3CO_2NH_4$; pH=4.7).

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