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INFLUENCE OF THE METHOD OF EXTRACTION ON THE NEUROGENIC ACTIVITY OF WASP (*Polistes lanio lanio*) VENOM

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Introduction: *Polistes lanio lanio* wasp venom (PLLv) causes neurogenic oedema via a tachykinin NK_1 receptor-mediated mechanism in mouse dorsal skin (Yshii *et al.*, 2005, www.pa2online.org). However, in subsequent experiments using venom obtained by a different method, we observed that the oedema was not inhibited by NK_1 receptor antagonist. In the present work, we used normal (C57BL/6) as well as NK_1 and vanilloid (TRPV1) receptor knockout (KO) mice to compare the oedematogenic effects of venom prepared by these two methods. **Methods:** Venom (PLLv1) was obtained as described by Yshii *et al.* (2005). Venom was also obtained by a new method in which the venom sacs were removed along with the sting and the sting then inserted into a small length of polyethylene cannula. The venom (PLLv2) was expelled into the cannula by lightly compressing the venom sac and was immediately lyophilized or stored in liquid form at –20°C. Male and female normal or NK_1 and TRPV1 receptor KO mice (25-30 g) were anaesthetized with urethane. ^{125}I-Albumin was injected via a tail vein and the venom or vehicle was injected i.d. into the shaved dorsal skin. After 30 min, the mice were killed and the skin site was removed. Oedema formation was assessed by the extravascular accumulation of ^{125}I-albumin in the skin compared to plasma. The results were expressed as the mean ± SEM and were compared by ANOVA and Bonferroni's modified *t*-test. **Results:** As previously observed with PLLv1, PLLv2 (0.3 – 10 mg/site) caused potent, dose-dependent oedema in mouse dorsal skin. However, in contrast to PLLv1, this oedema was not affected by co-injection of the tachykinin NK_1 receptor antagonist SR140333 (1 nmol/site), but was markedly reduced by the histamine H_1 receptor antagonist, pyrilamine (0.8 µg/site). In addition, the PLLv2-induced oedema in normal mice was similar to that in NK_1 and TRPV1 KO mice. **Discussion:** PLLv2 caused oedema equipotent to that of PLLv1. However, the venom obtained by this new method of extraction was devoid of the neurogenic component seen in PLLv1. This finding suggests that the previous method resulted in contamination of the venom by tackykinin-like components from glandular tissue. We conclude that in mouse dorsal skin pure PLLv2 causes inflammation via non-neurogenic mechanisms. **Acknowledgments: M.A.A.G. Barreto provided technical help. Supported by:** CAPES, CNPq, FAPESP (Brazil) and BHF (U.K.).

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