

THE APPLICATION OF NEGATIVE AND POSITIVE ION ELECTROSPRAY MASS SPECTROMETRY TO DETERMINE THE AMINO ACID SEQUENCES OF NEUROPEPTIDES ISOLATED FROM AUSTRALIAN AMPHIBIANS.

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Most Australian amphibians contain at least one potent neuropeptide in their skin glandular secretions.¹ These neuropeptides have various activities which deter attackers, both small and large. The most common neuropeptide activities are (i) contraction of smooth muscle (at nanomolar concentrations), and/or (ii) lymphocyte proliferation, including killer T cells (at micromolar concentrations). A selection of amphibian peptides has been chosen to illustrate these features and activity data will be presented. Quite often, small peptides like these, e.g. caerulein and tryptophyllin type peptides (see below for sequences) do not give positive ion electrospray spectra which provide total sequencing data. In such cases we use positive and negative ion electrospray spray spectra together to provide sequencing information. A selection of examples will be used to illustrate this problem.

Caerulein	pGlu Gln Asp Tyr(SO ₃) Thr Gly Trp Met Asp Phe (NH ₂)
Tryptophyllin 1.3	pGlu Phe Pro Trp Leu (NH ₂)

1 T.L.Pukala, J.H.Bowie, V.M.Maselli, I.F.Musgrave and M.J.Tyler, *Nat. Prod. Rep.* (Chemical Society, London), 2006, **23**, 368-394.