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Transcriptome analysis of the *Tityus serrulatus* scorpion venom gland

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Author(s)

Erika R. Alvarenga, Thaís M. Mendes, Bárbara F. Magalhaes, Flávia F. Siqueira, Arthur E. Dantas, Tatiana M. Barroca, Carolina C. Horta, Evanguedes Kalapothakis

ABSTRACT

The *Tityus serrulatus* scorpion is considered the most dangerous scorpion in Brazil and is responsible for several cases of human envenomation annually. In this study, we performed transcriptome profiling of the *T. serrulatus* venom gland. In addition to transcripts with housekeeping functions, such as those related to protein synthesis, energy supply and structural processes, transcripts from thirty-five families of venom peptides or proteins were identified. These transcripts included three new complete sequences of toxins and more than a dozen putative venom gland proteins/peptides. The venom gland transcriptome profile was verified by comparison with the previously determined proteomic profile. In conclusion, this transcriptome data provides novel insights into the putative mechanisms underlying the venomous character of *T. serrulatus*. The collected data of scorpion transcripts and proteins/peptides described herein may be an important resource for identifying candidate targets of molecular therapies and preventative measures.

KEYWORDS

Scorpions; Antimicrobial Peptides; Neutoxins; Venom Glands; Brazilian Yellow Scorpion

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