

Differences in the venom composition and immunochemical analysis of three species of *Micrurus* genus.

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Coral snakes are the only Elapids in America. They are represented by three genera: *Micruroides*, *Leptomicurus*, and *Micrurus*. The genus *Micrurus* comprehend around 57 species and 20 are from Brazil, representing a public health problem. The symptoms caused by envenomation from Coral snakes are the result of neuromuscular blockade and death is due to cardiovascular and respiratory arrest. In Brazil, the commercial antiserum against Coral snakes is raised in horse using venoms from *M. corallinus* (50%) and *M. frontalis* (50%), but this serum did not protect against the envenomation with *M. altirostris* venom (Moraes et al, 2003; Abreu *et. al.*, 2008). We have been studied the proteome of *M. corallinus*, *M. frontalis* and *M. altirostris* venoms and compared with cDNA databank of *M. corallinus*. Furthermore we investigate the immunoreactivity of these venoms by immunoblotting using commercial antivenoms. To assess the venom proteomic profile we used two different approaches without pre-purification steps: (i) 1D (one-dimensional SDS/PAGE) plus HPLC with tandem MS and (ii) 2DE (two-dimensional gel electrophoresis) plus MALDI-Q-Tof or MALDI – Tof-Tof. These venoms showed around 25 spots in the 2DE with molecular masses ranging from ~12-70 kDa. We identified seven different protein families: metalloproteinase, L-amino acid oxidase, neurotoxins, cardiotoxins, snake venom growth factor, phospholipase A₂ and C-type lectin like. The serum showed strong reactivity on the region rich of metalloproteinase and L-amino acid oxidase (~45-66 kDa) but low-molecular weight proteins were poorly recognized. This data will provide information that will allow the improvement of serum production.

Keywords: *Micrurus*, proteomic, serum, snake, venom

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