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## Vascular endothelial growth factor from *Crotalus durissus collilineatus* venom: Structure and angiogenic properties

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Snake venoms display important pharmacological activities, since they present a variety of components including the vascular endothelial growth factors (VEGFs). Although VEGF have already been identified by omics analysis in the *Crotalus durissus collilineatus* (Cdc) venom, it was not isolated so far. VEGFs are non-enzymatic homodimers of 20-30 kDa, which regulates angiogenesis by inducing proliferation, migration and permeability of endothelial cells. However, their role in the envenoming pathophysiology is not yet elucidated. In the present study, a new VEGF from Cdc venom was isolated and its structure and angiogenic properties were partially determined. Cdc venom was fractionated by reversed phase FPLC (Fast Protein Liquid Chromatography) and all the fractions collected were submitted to an ELISA assay for VEGF identification. Fraction 24 (positive for VEGF) was submitted to an anion exchange chromatography (HiTrap QXL column) and the CdcVEGF was purified. It was reduced, alkylated with iodoacetamide, digested with trypsin, and submitted to mass spectrometry analysis (ESI-

QTOF and PMF), in order to determine its primary structure. It showed a molecular mass of 25.705 kDa. An angiogenesis in vitro assay by the induction of tube formation in Matrigel® by HUVECs cells was performed, showing that CdcVEGF induced a tube formation even more significant than the positive control (bFGF). This work was pioneer on the isolation and partial characterization of a new VEGF from Cdc venom.

### Speaker Biography

Eliane Candiani Arantes is Full Professor of School of Pharmaceutical Sciences, University of São Paulo (USP), a CNPq grantee of research productivity fellowship - Level 1. Graduated in Pharmacy (1979) and Pharmacy-Biochemistry (1980) by the School of Pharmacy and Dentistry of Ribeirão Preto, USP. She obtained the Master's and Doctor's degrees in Sciences, Biochemistry area, at the Medical School of Ribeirão Preto of USP, and developed a Post-doctorate training (2012) at University of Liège, Faculty of Sciences, Mass Spectrometry Laboratory. She has 110 publications that have been cited over 2500 times, her publication H-index is 32 and has been serving as an editorial board member of Journal of Venomous Animals and Toxins Including Tropical Diseases.

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