

[Proc. Natl. Acad. Sci. USA, **90**, 928-932 (1993)]

[Lab. of Pharmaceutics]

Primary structure of two-chain botrocetin, a von Willebrand factor modulator purified from the venom of *Bothrops jararaca*.

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The complete amino acid sequence and location of the disulfide bonds of two-chain botrocetin, which promotes platelet agglutination in the presence of von Willebrand factor, from venom of the snake *Bothrops jararaca* were determined by analysis of peptides generated by enzymatic and chemical cleavage of the S-pyridylethylated protein. Two-chain botrocetin is a heterodimer composed of the α and β subunits (133 and 125 amino acid residues, respectively) held together by a disulfide bond. Intrachain disulfide bonds link six half-cystine residues in each subunit. Amino acid sequence and disulfide bond location of two-chain botrocetin is homologous to C-type lectins.

[Biochem. Biophys. Res. Commun., **191**, 1386-1392 (1993)]

[Lab. of Pharmaceutics]

Alboaggregin-B and botrocetin, two snake venom proteins with highly homologous amino acid sequences but totally distinct functions on von Willebrand factor binding to platelets.

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Alboaggregin-B (AL-B) was highly purified from the snake venom of *Trimeresurus albolabris* and characterized structurally and functionally, comparing with botrocetin, another snake venom protein. Both proteins are a heterodimer and show a high degree of sequence homology to each other and also to C-type lectins. AL-B binds to platelet glycoprotein (GP) I b without affecting the binding of botrocetin to vWF. The binding of AL-B to GP I b does not potentiate the platelet aggregation even by exogenous fibrinogen, suggesting that AL-B binding to GP I b does not activate GP II b/III a complex.

[J. Environ. Sci. Health, **A28**, 821-837 (1993)]

[Lab. of Public Health]

Mutagenicity of Ozonated and Chlorinated Humic Substances.

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Humic substances were ozonated and subjected to the mutagenicity assay with *Salmonella typhimurium* TA 98 and 100. Both of ozonated humic substances and their dichloromethane extracts were not mutagenic. Then, ozonated humic substances were chlorinated, extracted with ether at pH 7 and 1.5, and subjected to the mutagenicity assay. Both of the ether extracts was found to be mutagenic on TA 100. The ozonation and ozonation-chlorination products of humic substances were determined by gas chromatography-mass spectrometry (GC-MS) and mutagenic aldehydes were identified.