

Structural Studies of Infestin 4, a Factor XIIa inhibitor

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Infestin is a protein from *Triatoma infestans*, the main Chagas disease vector in Brazil, composed of seven Kazal-type domains and is further processed to yield a few serine protease inhibitors with different specificities. Infestin 3-4 are the last two domains of the infestin gene and are found *in vivo* in the insects anterior midgut [1].

The last domain, infestin 4, has been cloned, expressed and purified, showing remarkable inhibitory activity towards the human factor XIIa of the coagulation cascade. Crystals of infestin 4 were grown using the sitting-drop vapour-diffusion method with PEG 8000 as precipitant. X-ray diffraction data were collected to a maximum resolution of 1.4 Å using a synchrotron radiation source. Crystals belong to the orthorhombic space group $P2_12_12_1$, with unit-cell parameters $a = 25.76$, $b = 45.38$ and $c = 56.77$ Å. Initial phases were calculated by molecular replacement using an edited rhodniin molecule as the search model. Currently the structure is under the final stages of refinement with an $R = 0.203$ and $R_{\text{free}} = 0.214$. We shall discuss the implications of this structure in the light of its biological inhibitory function against factor XIIa.

[1] Campos I.T.N., et al., *Insect Biochem. Mol. Biol.*, 2002, **32**, 991.

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