

## ***Sulfotopes from *Trypanosoma cruzi* major or minor antigenic glycoproteins, are involved in parasite infection, and immunopathogenesis of experimental Chagas disease***

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### **Abstract**

**Statement of purpose:** Chagas disease (ChD) constitutes a major endemic health problem in Latin America. The presence of sulfate-bearing-glycoproteins has been identified in *Trypanosoma cruzi*, they are targets of specific immune responses and subjects chronically infected with *T. cruzi* mount specific humoral immune responses to sulfated glycoproteins. Cruzipain (Cz), a major antigen. Containing a C-terminal domain (C-T), is responsible for the immunogenicity of the molecule in natural and experimental infection. Synthetic anionic sugar conjugates containing N-acetyl D glucosamine-6-sulfate (NAcGlc6-SO<sub>3</sub>) mimics the N-glycan-linked sulfated epitope (sulfotope) displayed in the C-T. IgG2 antibody levels specific for sulfotopes are inversely correlated with Chagas disease severity. Another sulfated glycoprotein with serinecarboxypeptidase (SCP) activity was studied.

**Methodology & Theoretical Orientation:** Native SCP copurifies with Cz from The presence of short-sulfated high-mannose-type oligosaccharidic

### **Speaker Publications:**

1. Acosta et al (2008) Sulfates are main targets of immune responses to cruzipain and are involved in heart tissue damage in BALB/c immunized mice. *International Immunology* 20: 461- 470.
2. Couto et al., (2012) An anionic synthetic sugar containing 6-SO<sub>3</sub>-NAcGlc mimics the sulfated cruzipain epitope that plays a central role in immune recognition. *FEBS J.* 279(19):3665-79.
3. Ferrero et al., (2014). Effects of sodium chlorate in the sulfation process of *Trypanosoma cruzi* glycoconjugates. Implication of sulfated motifs in cellular invasion. *Acta Tropica* 137 161-173.
4. Soprano et al., (2018) *Trypanosoma cruzi* serinecarboxypeptidase is a sulfated glycoprotein, and a minor antigen in human Chagas disease infection. *Med Microbiol Immunol.* 207(2):117-128.

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### **Biography:**

Vilma G Duschak, Doctor in Biochemistry (1989), UBA. CONICET Researcher, Argentina since 1994. Post-graduate in Medicine Chile University (1990); Cooperation: Instituto-Cs-Biomédicas- San Pablo-University-Brasil (2005), Université-Jules Verne-Amiens- France (2007), Bernhard Noth Institute of Tropical Medicine, Hamburg, Germany (2010-2011). Editorial Advisory Board Member, Bentham Science Publishers. USA.