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## Mapping Antigenic Motifs in the Trypomastigote Small Surface Antigen from *Trypanosoma cruzi*

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### Abstract

The trypomastigote small surface antigen (TSSA) is a mucin-like molecule from *Trypanosoma cruzi*, the etiological agent of Chagas disease, which displays amino acid polymorphisms in parasite isolates. TSSA expression is restricted to the surface of infective cell-derived trypomastigotes, where it functions as an adhesin and engages surface receptors on the host cell as a prerequisite for parasite internalization. Previous results have established TSSA-CL, the isoform encoded by the CL Brener clone, as an appealing candidate for use in serology-based diagnostics for Chagas disease. Here, we used a combination of peptide- and recombinant protein-based tools to map the antigenic structure of TSSA-CL at maximal resolution. Our results indicate the presence of different partially overlapping B-cell epitopes clustering in the central portion of TSSA-CL, which contains most of the polymorphisms found in parasite isolates. Based on these results, we assessed the serodiagnostic performance of a 21-amino-acid-long peptide that spans TSSA-CL major antigenic determinants, which was similar to the performance of the previously validated glutathione S-transferase (GST)-TSSA-CL fusion molecule. Furthermore, the tools developed for the antigenic characterization of the TSSA antigen were also used to explore other potential diagnostic applications of the anti-TSSA humoral response in Chagasic patients. Overall, our present results provide additional insights into the antigenic structure of TSSA-CL and support this molecule as an excellent target for molecular intervention in Chagas disease.

### Full text:

<http://cvi.asm.org/content/22/3/304.abstract?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=1&andorexacttitle=and&andorexacttitleabs=and&fulltext=innopsys&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=date&tdate=5/31/2015&resourcetype=HWCIT>



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