



## ANTIBODY CHARACTERISTICS

**Name:** Anti-Sm Translationally Controlled Tumor Protein

**Target Species:** Schistosoma mansoni

**Status:** Available

**Description:** Sm-TCTP, a protein produced by a human parasite *S. mansoni*, binds to the HR-8 receptor and causes the release of histamine from human basophils. Expression of HR-8 is up regulated in asthma with the degree of upregulation correlating with the severity of asthmatic symptoms.

<u>Type</u>	<u>Location</u>	<u>Purification</u>	<u>Tested Applications</u>		<u>Available</u>
<input type="checkbox"/> Monoclonal	<input type="checkbox"/> Nuclear	<input type="checkbox"/> None	<input type="checkbox"/> Histology	<input type="checkbox"/> Flow	<input checked="" type="checkbox"/> Crude Ab
<input checked="" type="checkbox"/> Polyclonal	<input type="checkbox"/> Cytoplasm	<input checked="" type="checkbox"/> Am. Sulfate	<input type="checkbox"/> Cytology	<input checked="" type="checkbox"/> ELISA	<input type="checkbox"/> Purified Ab
<input type="checkbox"/> Engineered	<input type="checkbox"/> Membrane	<input type="checkbox"/> Chromato.	<input checked="" type="checkbox"/> Precipitation	<input type="checkbox"/> Therapy	<input checked="" type="checkbox"/> Immunogen
	<input checked="" type="checkbox"/> Secreted	<input type="checkbox"/> Affinity	<input checked="" type="checkbox"/> Blotting	<input type="checkbox"/> Other	<input type="checkbox"/> Hybridoma
		<input type="checkbox"/> Other			<input type="checkbox"/> Controls



Polyclonal Antibody against the  
Translationally Controlled Tumor Protein of *S. mansoni*

**Technology Reference**  
CX045

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**Fields**

Parasitology  
Immunology  
Allergy

**Key Words**

*S. mansoni*  
Schistosomiasis  
Allergic response  
Histamine release

**Stage of Development**

Purified antibody and  
immunogen available

**Patent Status**

**Status**

Seeking Licensing or  
Research Partner

**Applications**

- Diagnostic testing
- Research

**The Invention**

This invention consists of a rabbit polyclonal antibody that is specific for the Translationally Controlled Tumor Protein (Sm-TCTP) of the human parasite *S. mansoni*.

**Applications**

This antibody has been used in immuno-precipitation, immuno-blotting and ELISA. This antibody is also useful in immuno-diagnostic tests for detection and quantitation of Sm-TCTP consequent to *S. mansoni* infections. TCTP, also known as histamine releasing factor (HRF), levels are increased in patients with symptoms of asthma and correlate with the severity of the symptoms. This antibody may also be therefore useful in monitoring the status of individuals with asthma or allergy.

**Prior Art/Background**

*S. mansoni* is one of three species of helminth parasite responsible for schistosomiasis, a debilitating liver disease that is endemic to many tropical regions. The free-swimming cercariae form of this human parasite penetrates the skin and migrates to the portal circulatory system of the liver where it matures. The mature parasite migrates to the intestine where it releases eggs into the feces. These eggs develop into the "miracidium" form that can infect certain species of snails that serve as intermediate hosts. Sporocysts produced by infected snails complete the cycle by maturing into cercariae. This parasite embolizes in hepatic venules with the formation of granulomas and portal fibrosis that lead to internal bleeding, hepatosplenomegaly and hepatic insufficiency.

Sm-TCTP, a multifunctional protein produced by *S. mansoni*, is known to bind to the HR8 receptor resulting in the stimulation of the release of histamine from basophils. This histamine release plays a significant role in the allergic response associated with infection *S. mansoni*. The expression of HR8 is known to be up regulated in asthma and correlates directly with the severity of asthmatic symptoms. Since HRF and its homologues are believed to play a significant role in allergic responses, monitoring the levels of these proteins by an appropriate immunoassay may help in the prognosis of the allergic diseases.

**Benefits**

- Binds to a unique protein that has been implicated in the triggering of allergenic responses.



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**References**

Rao, KVN., Chen, L., Gnanasekar, M., and Ramaswamy, K. (2002) Cloning and characterization of a calcium binding, histamine-releasing protein from *Schistosoma mansoni*. **Journal of Biological Chemistry** **277**, 31207-31213.

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Research Focus

- Functional proteomics
- Parasite Immunology
- Allergy

Reviewer for Grant Agencies and Journals

- NIH vaccine study section
- Journal of Biological Chemistry
- Journal of Immunology
- Trends in Parasitology
- Trends in Molecular Medicine