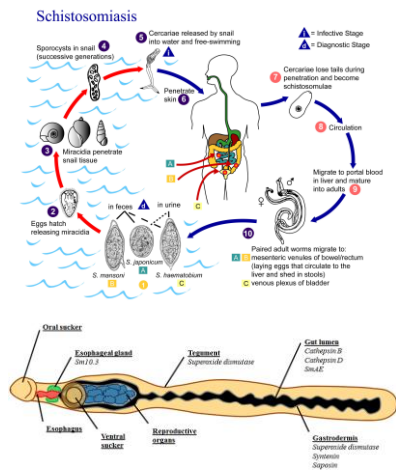


Schistosomiasis (Sm-p80) Vaccine-Antibody, Reagents & ELISA Kits



Schistosomiasis (also known as bilharzia, snail fever, and Katayama fever) is a disease caused by parasitic worms of the Schistosoma type. It mainly infects the urinary tract or the intestines. Symptoms include abdominal pain, diarrhea, bloody stool, or blood in the urine. Long term infection results in liver damage, kidney failure, infertility, or bladder cancer. Schistosomiasis affects almost 210 million people worldwide, and an estimated 12,000 to 200,000 people die from it

every year. The disease is most commonly found in Africa, as well as Asia and South America. Intestinal Schistosomiasis is caused by Schistosoma mansoni (**S. mansoni**) and occurs in Africa, the eastern Mediterranean, the Caribbean and South America. In addition, **S. intercalatum** causes a form of intestinal Schistosomiasis that has been reported in central African countries. Yet another form of intestinal Schistosomiasis, known as Oriental or Asiatic, is caused by the **S. japonicum** group of parasites (including **S. mekongi** in the Mekong river basin). **S. japonicum** is endemic to South-East Asia and the western Pacific region. Finally, **S. haematobium** is responsible for urinary Schistosomiasis and is endemic to Africa and the eastern Mediterranean.

Species of Schistosoma that can infect humans:

- **S. mansoni** (ICD-10 B65.1) and **S. intercalatum** (B65.8) cause intestinal schistosomiasis
- **S. haematobium** (B65.0) causes urinary schistosomiasis
- **S. japonicum** (B65.2) and **S. mekongi** (B65.8) cause Asian intestinal schistosomiasis
- Avian schistosomiasis species cause swimmer's itch.

Species of Schistosoma that can infect other animals:

- **S. bovis** — normally infects cattle, sheep and goats in Africa, parts of Southern Europe and the Middle East
- **S. mattheei** — normally infects cattle, sheep and goats in Central and Southern Africa
- **S. margrebowiei** — normally infects antelope, buffalo and waterbuck in Southern and Central Africa

- **S. curassoni** — normally infects domestic ruminants in West Africa
- **S. rodhaini** — normally infects rodents and carnivores in parts of Central Africa

Schistosomiasis vaccines: Most parasites pass through different life stages in different anatomic sites of its definitive host. The parasite has learned to live for decades in the host, developed host's immune defense mechanisms and protect itself from the host immune system. So developing an effective vaccine against any parasite, including schistosome, has remained elusive. More than 100 schistosome antigens have been tested for vaccine but only 25% protein confer some protection in animal models but fall short of WHO stated goal of at least 40% protection. Several schistosome antigens such as fatty acid-binding protein of 14 kDa from **S. mansoni (FABP14/Sm14)**, glutathione-S-transferase of 28 kDa (**GST28/Sh-28-GST**) from **S. haematobium**, **S. mansoni** tetraspanin 2 (**TSP-2**) have shown promise as vaccine candidate in animal model.

Host-exposed schistosome proteins that undertake essential functions (immune evasion, nutrient uptake and attachment) will be effective targets for a Schistosomiasis vaccine. **Sm-p80**, a functionally important antigen of **S. mansoni** plays a pivotal role in the schistosome immune evasion process. Sm-p80 is composed of a smaller subunit of **28 kDa** and a larger subunit of **78 kDa**. The large subunit was described to be localized in the parasite surface. This subunit has proteolytic activity in the presence of Ca²⁺ and plays an important role in immune evasion. Complete elimination of egg-induced organ pathology has been achieved using Sm-p80-based vaccine with 100% reductions in liver/intestine egg in animal model. Sm-p80 vaccination also afforded protection in mice, baboon, and hamster and protects against **S. mansoni**, **S. japonicum**, and **S. haematobium**. Sm-p80 vaccine is ready for human clinical trials.

Fatty Acid-Binding Protein (FABP)-14 kDa **S. mansoni** (Sm14) antigen is also being tested as vaccine candidate. Sm14 share significant sequence homology with a FABP15 from bovine Fasciola hepatica that causes disease in cattle and sheep leading to losses of billions of dollar. It is expected that Sm14 vaccination will provide protection against both **S. mansoni** and **F. Hepatica**.

About ADI Schistosoma Vaccine ELISA Kits-ADI has produced recombinant parasitic antigens that are used in vaccines, made antibodies, and developed antibody ELISA kits. The ELISA kits can be used to assess immune status of humans and animals and to assess vaccine efficacy or formulate new vaccines. Antibody ELISA kits for species and isotypes not listed here can be made available as well.

Schistosome Vaccine Related ELISA kits

Items Description	Species	Antibody Type IgG Cat#	Antibody Type IgM Cat#	Antibody Type IgA Cat#
S. mansoni parasitic antigens Antibody ELISA kits, 96 tests, Quantitative	Human	970-700-SMG	970-705-SMM	***
	Monkey	970-710-SMG	970-715-SMM	***
	Mouse	970-720-SMG	970-725-SMM	***
S. mansoni Sm-p80 Antibody ELISA kits, 96 tests, Quantitative	Human	970-730-SMG	970-735-SMM	***
	Monkey	970-740-SMG	970-745-SMM	***
	Mouse	970-750-SMG	970-755-SMM	***
S. Japonicum GST28 Antibody ELISA kits, 96 tests, Quantitative	Human	970-760-SJG	970-765-SJM	***
	Monkey	970-770-SJG	970-775-SJM	***
	Mouse	970-780-SJG	970-785-SJM	***
S. Japonicum GST28 antigen ELISA kit	800-400-GST			

***=IgA or IgE or other IgG isotypes (IgG1-4) can be ordered as custom ELISA. Please call ADI for details.

Items	Catalog #	Product Description	Product Type
S. mansoni	SM231-R-50	Recombinant (E. coli) Sm23 protein (S. mansoni, 1-218aa, His-tag >95%)	Rec. Protein
	SM251-R-100	Sm25 antigenic peptide (S. mansoni, 36-82 aa, >95%, low endotoxin)	Rec. Protein
	SM281-R-50	Recombinant (E. coli) Sm28/Smp28/GST28/GST-mu protein (S. mansoni, 1-211aa, His-tag >95%)	Rec. Protein
	SMAN11-M	Mouse monoclonal Anti-S. mansoni IgG for IF/ELISA	Mouse-mono
	SMP801-R-10	Recombinant (E. coli) Sm-p80/Calpain/CANP (S. mansoni, 1-758aa, His-tag >95%)	Rec. Protein
	SMP801-S	Anti-Sm-p80/Calpain/CANP (S. mansoni, 1-758aa, His-tag >95%) antiserum	Rabbit-Poly
S. Japonicum	SM282-R-50	Recombinant (E. coli) Sm28/Smp28/GST28/GST-mu protein (S. Japonicum, 1-211aa, no-tag >95%)	Rec. Protein
	SM282-S	Anti-Sm28/Smp28/GST28/GST-mu protein (S. Japonicum, 1-211aa) antiserum	Rabbit-Poly
	SM283-BTN	Monoclonal Anti-Sm28/Smp28/GST28/GST-mu protein (S. Japonicum) IgG-Biotin conj	Mouse-Mono
	SM283-M	Monoclonal Anti-Sm28/Smp28/GST28/GST-mu protein (S. Japonicum) IgG	Mouse-Mono
	SM283-R-50	Recombinant (Sf9) Sm28/Smp28/GST28/GST-mu protein (S. Japonicum, 1-211aa, His-tag >95%, low endotoxin)	Rec. Protein
	GST11-A	Anti-Glutathione Transferase (GST, E. coli) IgG# 1, aff pure	Rabbit-Poly
	GST11-AP	Anti-Glutathione Transferase (GST, E. coli) IgG-AP conjugate	Rabbit-Poly
	GST11-C	Recombinant purified Glutathione Transferase, GST (E. coli), WB +ve control	Western control
	GST11-R	Purified Recombinant Glutathione Transferase (E. coli) protein	Rec. Protein
	GST11-S	Anti-Glutathione Transferase, GST (S. japonicum, E. coli) antiserum # 1	Rabbit-Poly
	GST12-C	Recombinant purified Glutathione Transferase (GST)-Protein (S. japonicum, ~27 kda) control WB +ve control	Western control
	GST12-M	Monoclonal Anti-Glutathione Transferase, GST (S. japonicum, E. coli), ascites	Mouse-Mono
	GST13-A	Anti-Glutathione Transferase (GST, S. japonicum) IgG# 3	Goat-Poly
	GST13-AS	Anti-Glutathione Transferase (GST, S. japonicum) IgG-Agarose (Aff matrix)	Goat-Poly
	GST13-BTN	Anti-Glutathione Transferase (GST, S. japonicum) IgG-Biotin Conjugate	Goat-Poly
	GST13-FITC	Anti-Glutathione Transferase (GST, S. japonicum) IgG-FITC Conjugate	Goat-Poly
	GST13-HRP	Anti-Glutathione Transferase (GST, S. japonicum) IgG-HRP Conjugate	Goat-Poly
	GST13-R	Purified Recombinant Glutathione Transferase-His(x6) tag (S. japonicum, GST-His) protein	Rec. Protein
	GST14-R	Purified Recombinant Glutathione Transferase-Ubiquitin fusion (S. japonicum, GST-Ub) protein	Rec. Protein
	GST15R-AS	Glutathione Transferase (GST, S. japonicum,) Protein-Agarose (Aff matrix)	Affinity support
GST16-BTN	Monoclonal Anti-Glutathione Transferase (GST, S. japonicum, E. Coli) IgG-Biotinylated	Mono-Mice	
GST16-M	Monoclonal Anti-Glutathione Transferase (GST, S. japonicum, E. Coli) IgG#2, purified	Mouse-Mono	
GST17-R	Purified Recombinant Glutathione Transferase (GST, S. japonicum) protein, native S. Japonicum (No tag)	Rec. Protein	