

Trypanosoma cruzi (*Chagas Disease*)



We are constantly researching and developing new ways to improve our technology and consequently our products. As a result of one of our findings we were able to increase both the sensitivity (98%) and Specificity (99%) of our NovaLisa™ Chagas (Trypanosoma cruzi) IgG ELISA.

Trypanosoma cruzi is the causative agent of the Chagas disease (American trypanosomiasis). It occurs in humans and many vertebrate animals in Central and South America.

This parasite circulates in endemic sylvatic foci between vertebrates and insects (reduviid bugs), the latter transmitting it to humans. These blood sucking bugs find a hiding place for the day and quest for food at night. The natural habitats of these insects are nests, animal dens, and other places frequented by vertebrate animals whose blood provides their sustenance. Some species of reduviids have invaded domestic habitats and are typically found in simple human domiciles. Potential carriers of Trypanosoma cruzi include over 150 species of wild and domestic mammals. The important in epidemiological terms are dogs, cats, rodents, chickens, opossums and armadillos. Aside from the reduviid vector, Trypanosoma cruzi can be transmitted between humans by blood transfusions, diaplacental infection, or organ transplants.

In the intestine of the vector, the parasites convert into intensively multiplying epimastigote stages, and later into trypomastigote forms that are excreted in feces after 6-7 days. At subsequent bloodmeals, infected reduviids excrete droppings from which the trypomastigotes infect the host through skin lesions or the mucosa. Once in the human body, the parasites are phagocytosed by macrophages or invade other cells, mainly muscle cells (heart, skeletal, or smooth musculature) as well as neurological cells. Within the cells, they transform into amastigote forms and multiply. Cells filled with up to 500 parasites are called "pseudocysts". After 5 days the parasites develop into the epimastigote form and then the trypomastigote form and return to the bloodstream.

Some infected persons react to entry of the parasite into the skin or conjunctiva with a local, inflammatory dermal reaction (chagoma) or conjunctivitis with eyelid edema (Romaña sign). The following symptoms are observed in the acute phase, which follows an incubation period of 7-30 days: fever, edema, lymph node swelling, hepatomegaly, splenomegaly, myocarditis and less frequently, meningoencephalitis. Beginning about 8-10 weeks after the acute phase the infection turns to an inapparent phase. Clinical manifestations of the chronic phase, often starting 10-20 years after the acute phase, are cardiopathy, digestive tract damage and neuropathies.

Infections may be diagnosed by:

- Microscopy: Determination of trypanosomes in the acute phase in blood cultures.
Serology: Determination of specific antibodies based on the ELISA-technique

NovaLisa™ Chagas (Trypanosoma cruzi) IgG ELISA:

The NovaLisa™ Chagas (Trypanosoma cruzi) IgG ELISA is intended for the qualitative determination of IgG- class antibodies against Trypanosoma cruzi in human serum or plasma (citrate).

Antigens:

Recombinant Trypanosoma cruzi antigens (TcF)

Specific performance characteristics:

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	Mean	CV %	n	Mean	CV %		
IgG	15	0,61	7,8	4 7	5,7 13,5	10,2 7,7	>98	99

Order information:

ELISA	Number of determinations	Product number
Chagas (Trypanosoma cruzi) IgG	96	CHAG0560