VIASURE

Trypanosoma cruzi Real Time PCR Detection Kit

Pathogen and product description

Chagas disease (CD), also known as American trypanosomiasis, is a potentially life-threatening illness caused by the protozoan parasite *Trypanosoma cruzi (T. cruzi).* It is endemic in Latin America and spreading around the globe due to human migration. This microorganism is a hemoflagellate protozoan of the order *Kinetoplastida* and family *Trypanosomatidae*. *T. rangeli* is the second most common trypanosome species that infects humans in Latin-American countries, but it is a non-pathogenic parasite to humans and other mammals.

Trypanosoma cruzi is transmitted to humans by blood-sucking triatomine bugs, congenital transmission, blood transfusion, organ transplantation and by consuming food and juice contaminated with the parasite. Chagas disease to humans has two forms of transmission, natural and secondary transmissions. Natural transmission occurs when blood-sucking bugs from the triatominae subfamily eliminate the *T. cruzi* by feces or urine onto the skin of a human after feeding, which leads to scratch in the region because the feces or urine cause irratation. Thus, a small fissure is created in the skin that is sufficient for entry of the parasite into the bloodstream. Secondary transmission occurs by means of the transfusion, transplant, breastfeeding as well as during pregnancy.

Clinically, Chagas disease has two clinical phases: the acute early phase (fatal for 2-8% of infected people) lasting up to 2 months which is characterized by fever and many circulating parasites in bloodstream but usually asymptomatic or unrecognized, and the chronic phase which can be classified into the indeterminate and determinate forms. The indeterminate stage may last for decades after infection, during which patients can transmit the parasite to others. The patient has evidence of immunity but remains infected. At this stage, infection is controlled, but the immune system does not prevent disease progression. Thirty to 40% of infected patients develop the chronic and symptomatic stage which causes cardiomyopathies and digestive tract pathologies.

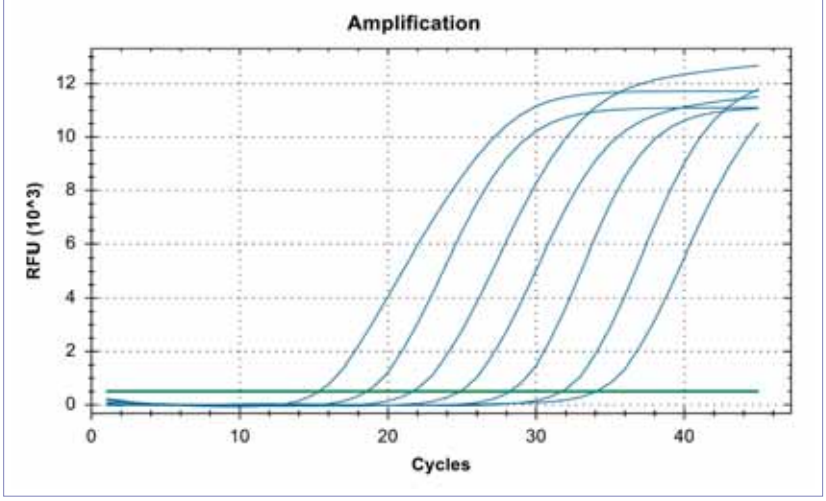
Diagnosis is traditionally performed by serological methods based on different antigens (ELISA, IFA). Conversion to negative serology is currently the only test available to assess parasitological cure. However, this negative seroconversion can take years to decades after treatment to occur in adult population and is therefore not adequate as an endpoint for clinical trials. The polymerase chain reaction (PCR) could be the tool to amplify parasite DNA sequences with high specificity and sensitivity.

VIASURE *Trypanosoma cruzi* Real Time PCR Detection Kit is designed for the diagnosis of the *Trypanosoma cruzi* in blood products. After DNA isolation, the identification of *Trypanosoma cruzi* is performed by a fragment amplification in a repeated conserved region called satellite DNA using specific primers and a fluorescent-labelled probe.

THE REAL ONE STEP qPCR

Analytical sensitivity

VIASURE *Trypanosoma cruzi* Real Time PCR Detection Kit has a detection limit of ≥10 DNA copies per reaction.



Dilution series of Trypanosoma cruzi (10^7-10^1 copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (channel FAM).

Components

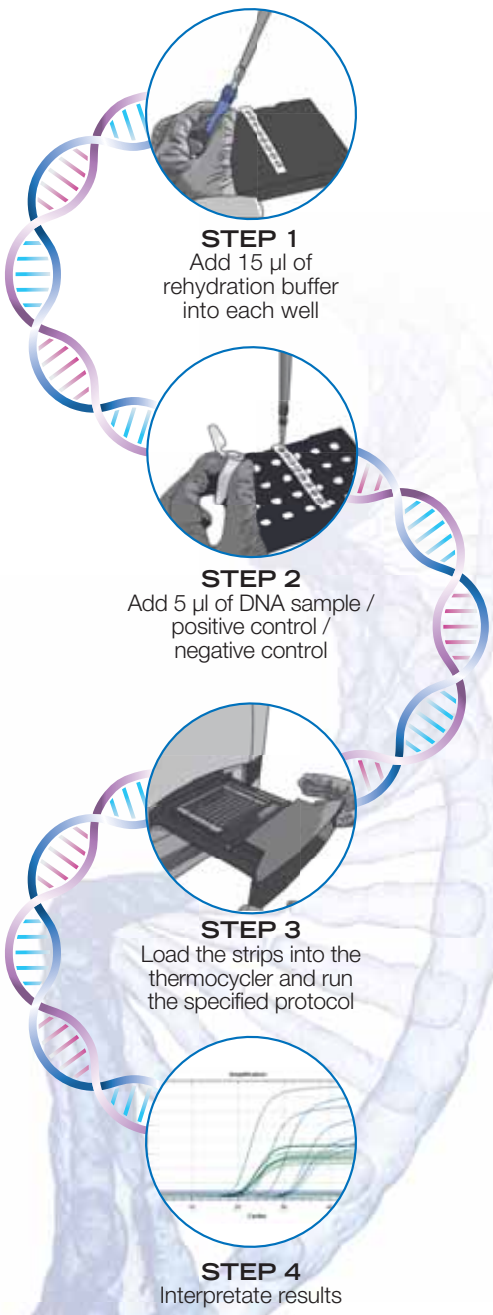
Reagent/Material	Description	Colour	Quantity
Trypanosoma cruzi 8-well strips	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	White	6/12 x 8-well strip
Rehydration Buffer	Solution to reconstitute the stabilized product	Blue	1 vial x 1,8 mL
Trypanosoma cruzi Positive Control	Non-infectious synthetic lyophilized cDNA	Red	1 vial
Negative Control	Non template control	Violet	1 vial x 1 mL
Water RNAse/DNAse free	Water RNAse/DNAse free	White	1 vial x 1 mL
Tear-off 8-cap strips	Optical caps for sealing Wells during thermal cycling	Transparent	6/12 x 8-cap strip

Kit References

Reference	Description
VS-CHA106L	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 6 x 8-well strips, low profile
VS-CHA106H	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 6 x 8-well strips, high profile
VS-CHA112L	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 12 x 8-well strips, low profile
VS-CHA112H	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 12 x 8-well strips, high profile
VS-CHA113L	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 96-well plate, low profile
VS-CHA113H	Viasure *Trypanosoma cruzi* Real Time PCR Detection Kit 96-well plate, high profile

Work Flow

One-step rehydration of wells and add your extracted DNA



STEP 1
Add 15 µl of rehydration buffer into each well

STEP 2
Add 5 µl of DNA sample / positive control / negative control

STEP 3
Load the strips into the thermocycler and run the specified protocol

STEP 4
Interpretate results

CERTEST BIOTEC, S.L.
Pol. Industrial Río Gállego II, Calle J, Nº 1,
50840, San Mateo de Gállego, Zaragoza (SPAIN)
www.certest.es

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