Leishmania profile

Leishmania

BioSystems

What is Leishmania?

Leishmania is a diphasic parasite that completes its life cycle in two hosts, a dipteran phlebotomine sandfly harbouring the flagellated form called promastigote and a mammal in which the non-flagellated intracellular form called amastigote develops. In this way, the terminal promastigote or metacyclic promastigote is transmitted by the phlebotome to a new mammalian host.
The etiological agent of visceral and cutaneous leishmaniasis in southern European countries is *Leishmania infantum*. Canine leishmaniasis occurs in approximately fifty countries worldwide, with a particularly high prevalence in the Mediterranean region and in regions of South America.

Leishmania stages

If the dog is able to develop an effective immune response, the infection is controlled and the dog remains infected but without clinical signs or lesions (subclinical infection). Conversely, when the dog develops an immune response that is not effective, the infection progresses and the dog develops the classic clinical signs of the disease. Therefore this disease is not synonymous with an active clinical picture.

Why diagnose the Leishmania?

Leishmaniasis is a very important disease because of its impact on veterinary medicine and also on human health. It affects both wild and domestic animals.

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Diagnostic

The diagnosis of canine leishmaniasis requires a comprehensive approach that includes an assessment of the clinical history, a thorough physical examination and various diagnostic tests, such as blood count, serum biochemical profile, urinalysis, urine protein/creatinine ratio, proteinogram and coagulation tests. Finally, serological tests to detect infection, or PCR, are necessary to reach a diagnosis. The determination of anti-Leishmania antibodies in canine samples by immunofluorescence in *Leishmania infantum* is the reference method, since it has a high specificity and diagnostic sensitivity for dog infection (96% and 98% respectively) in symptomatic animals.

Performance characteristics: IF

Indirect immunofluorescence (IFA) is performed by dispensing animal serum onto a slide coated with Leishmania promastigotes. The antibodies present in the serum bind to the promastigotes and positivity is evidenced by fluorescent secondary antibodies. Samples in which homogeneous fluorescence is observed under the microscope are considered positive. Positive samples should be titered. The titer is defined as the highest dilution that gives a positive result. It is a very useful technique in epidemiological studies, in the clinic and in treatment monitoring.

Reference values

An IFA titer >1/80 is considered positive. A titer equal to or above the cut-off point will indicate contact with the infectious agent, and possible disease.

Product	Code	Presentation
Substrates		
Anti-Leishmania Antibodies (Leishmaniosis) Kit	44950	120 test
Anti-Leishmania Antibodies (Leishmaniosis) Slides	44951	120 test
Conjugates		
Conjugate IgG FITC/EVANS Dog (LH/EHR)	44960	10 ml
Conjugate IgG FITC/EVANS Dog (LH/EHR)	44952	3,5 ml
Immunofluorescence controls		
Leishmania infantum positive control	44953	0,3 ml
Canine negative control	44954	0,3 ml
Auxiliary reagents		
Mounting medium	44959	3 ml
PBS 10X	44958	100 ml
PBS 10X	44962	500 ml
Coverslips 24 x 60 mm (100 u.)	44897	100 u.
Blotting paper	44669	10x12 poc.
Instrument and auxiliary material		
iPRO, Immunofluorescence Processor	84101	-
Dilution tube (1.1 ml)	AC14682	960 u.
iPRO Microtube 2ml adaptor (68 units)	AC14680	68 u.
Concentrated washing solution	BO13416	100 ml

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