UPTOSPEED Express Updates
SCIENTIQUIPP
Application Note | Apr 2024 | Vol. 3



Detection of Leishmania in samples from dogs as a preventive measure

Canine Leishmaniasis is a zoonotic disease caused by Leishmania infantum, whose most frequent signs in dogs are weight loss, skin lesions, lymphadenomegaly, muscle atrophy, vomiting and diarrhea. In addition to dogs, around 70 species of mammals, including humans, are optimal hosts for Leishmania.

Due to the severity of symptoms in humans, as well as the high level of exposure to infection around the world (around 350 million people exposed), it is advisable to go to the veterinarian when any of the signs described above are noticed, and thus prevent the spread of the disease, both to other animals and humans.

Visceral leishmaniasis (VL) also known as kala-azar (KA) is endemic in 75 countries across Asia, Africa and the Americas. India accounts for 18% of the global burden of kala-azar in 2020. Kala-azar remains a substantial public health problem in the country as it is present in 54 districts across four states — Bihar (33 out of 38 districts), Jharkhand (4 out of 24 districts), Uttar Pradesh (6 out of 75 districts) and West Bengal (11 out of 23 districts). Micro-stratification surveys reveal that there are 633 blocks in these four states that are endemic. Sporadic cases are also reported in other states including Assam, Gujarat, Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh, Haryana, Puducherry, Sikkim, Tamil Nadu and Uttaranchal.

How is the disease transmitted from dogs to humans?

Learn more about our products at scientiquipp.com/centrifuges

For Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific uses or applications.
© Scientiquipp. Pvt. Ltd. All rights reserved. All trademarks are the property of Scientiquipp. Pvt. Ltd. and its subsidiaries unless otherwise specified.

Transmission of Leishmaniasis between dogs and humans occurs when a mosquito that has fed on the blood of an infected dog bites a human. When this happens, the blood of the mosquito that contains the Leishmania mixes with ours, and the Leishmania invades the phagocytic cells of different tissues of our body, which it uses to replicate. As a result of this replication, many Leishmania “offspring” are formed, eventually breaking through the cell membrane and re-entering the bloodstream. Thus, when a new mosquito feeds on our blood, it will be transmitted again, perpetuating its life cycle. In humans, the usual clinical manifestations of Leishmania infection are fever, anemia, fatigue, hepatosplenomegaly, and suppression of immunity, leading to death in the most extreme cases.



Protocol for the detection of Leishmania

There are different tests for the diagnosis of Leishmaniasis in dogs, the most common, due to its convenience, being the rapid test in serum, which detects seroconversion. To perform this test, a sample of approximately 1-1.5 ml of blood from the dog must be taken in a 5 ml tube with heparin. The sample is then centrifuged at 2,500-3,000 rpm for 5-10 minutes. After centrifugation, the sample is divided into two fractions. The upper fraction, with a clear and transparent appearance, corresponds to blood plasma, which is transferred to another tube. Finally, a drop of the plasma is taken and placed on a strip provided by the test. The reagent, also provided by the test, is added and the result is revealed.

Leishmaniasis is a zoonotic disease, easily transmitted from dogs to humans. One of the preventive measures is analysing seroconversion for Leishmania in plasma samples originated from dogs suspected of infection, for which it is necessary to extract the plasma from whole blood through a simple centrifugation step, which will be done with an equipment like the ROTA 4V/FM centrifuge.

This equipment has a rotor to run up to 28 blood tubes, easily programmable in speed and time. Its small size makes it the right choice for clinics and small veterinary laboratories.

For Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific uses or applications.
© Scientiquipp. Pvt. Ltd. All rights reserved. All trademarks are the property of Scientiquipp. Pvt. Ltd. and its subsidiaries unless otherwise specified.

Recommended Centrifuge:



Product – Rota

ROTA 4R V/FM (Non -Refrigerated Centrifuge)
PART NO : 100129

ROTOR : 4 X 175mL
(Swingout Rotor including 7ml adapters (28 tubes)
PART NO : 200151

About Scientiquipp. Pvt.Ltd.

Since the 1980's Scientiquipp (formerly known as Plasto Crafts) has been synonymous with customer-oriented processes and innovative products, such as laboratory devices. Today, we serve as experts and advisors, using our unique knowledge and experience to support laboratories and research institutions around India. The foundation of the company's expertise is its focus on its customers. Scientiquipp's exchange of ideas with its customers results in comprehensive solutions that in turn become industry standards. Scientiquipp will continue this path in the future, to the standard set by the company's founders: that of *enabling the future of medicine.*

European Brushless Technology | CE ISO 9001:2015 Certified | IAF

CE Certified / ISO 9001:2015

Scientiquipp Private Limited
C/101, Shanti Industrial Premises,
Tambe Nagar, S N Road,
Mulund West, Mumbai 400080.
+919769431680 | scientiquipp@gmail.com

Follow Us On:

Learn more about our products at scientiquipp.com/centrifuges

For Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific uses or applications.
© Scientiquipp. Pvt. Ltd. All rights reserved. All trademarks are the property of Scientiquipp. Pvt. Ltd. and its subsidiaries unless otherwise specified.