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Product Information

Name of Kit: **ImmunoComb[®] Ovine Q fever Antibody Test Kit**

Catalog No: 50OQF103/50OQF130

No of Tests: 30 (Standard Kit) / 300 (Lab Kit)

Intended Use: The ImmunoComb[®] Ovine Q fever Test Kit is designed to determine sheep serum IgG antibody to *Coxiella burnetii* (Q fever).

Diagnostic Method: The ImmunoComb[®] test is based on solid phase “dot”-ELISA technology. Antigen is applied to test ‘spots’ on the solid phase, which is a comb-shaped plastic card.

The samples to be tested are mixed with diluent in the first row of wells of a multi-chamber developing plate. The test spots on the Comb are then incubated with the samples in the developing plate. Specific IgG antibodies from the samples, if present, bind to the antigen at the test spots.

The Comb is then transferred to a well, where unbound antibodies are washed from the antigen spots. In the next step, the Comb is allowed to react with an anti-sheep IgG Alkaline Phosphate conjugate, which will bind to antigen-antibody complexes at the test spots. After 2 more washes, the Comb is moved to the last well, where a color result develops via an enzymatic reaction. The intensity of the color result of test spots corresponds directly to the antibody level in the test sample.

Immunology: *Coxiella burnetii* exists in two antigenic phases (I and II). This phenomenon is noteworthy for diagnosing Q fever disease. In the **acute** stage of illness, antibody levels to **phase II** appear earlier and are greater than to **phase I**. Antibodies to

phase I antigens of *C. burnetii* take longer to appear and indicate **chronic** exposure to the bacteria.

Antibodies to **phase I** and **II** antigens have been known to persist for **months** or **years** after initial infection.

Interpretation: The IgG antibody titer to *C. burnetii* is determined by comparing the color intensities of test results between the test specimen and positive control sample (C+). Specimens with identical or higher color intensity than the C+ are considered positive.

Biogal's Dot-ELISA ImmunoComb® kit for sheep employs the **phase II** strain of *C. burnetii*. Since antibodies to **both phases (I and II)** have been known to persist for **months** and even **years** after initial infection, this ImmunoComb® test kit is suitable for detecting antibodies in both **acute** and **chronic** stages of the disease.

Main Application: Provides information about previous exposure to *Coxiella burnetii*. Q fever is an insidious animal disease with worldwide public health importance. Routine testing of livestock for antibodies to *C. burnetii* should be practiced in order to identify infected animals, which may otherwise appear healthy.

Other Diagnostic Methods: Q fever serology is the preferred diagnostic method over other laboratory techniques (e.g. bacterial isolation, PCR and immunohistochemistry). Several procedures have been used to measure antibodies to *Coxiella burnetii* antigens: indirect ImmunoFluorescence Assay (IFA), Complement Fixation (CF) and ELISA. IFA (regarded as the reference) and ELISA have been found to be as specific and more sensitive than CF.

References:

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Masala, G., Porcu, R., Sanna, G., Chessa, G., Cillara, G., Chisu, V. and Tola, S. (2004). Occurrence, distribution, and role in abortion of *Coxiella burnetii* in sheep and goats in Sardinia, Italy. *Vet Microbiology*, **19;99 (3-4)**, 301-305.

Raoult, D. & Marrie, T. (1995). Q Fever. *Clinical Infectious Diseases*, **20**, 489-496.

<http://www.cdc.gov/ncidod/dvrd/qfever/IFA>

(PI OQF 3/2/05)