Ractopamine - LFD screening test for swine urine
2.5 ppb cutoff
Cat. No: RT-LFD-25-SU-IDS

A Screening Test for Rapid Detection of Ractopamine in Swine Urine Samples

ABOUT RACTOPAMINE

Ractopamine is a beta-adrenergic agonist feed-additive that enhances leanness. The mechanisms of Ractopamine's leanness-enhancing actions are unknown but are believed to be mediated through beta-adrenergic receptors located on muscle and adipose tissue cells. It was found that Ractopamine may stimulate adipose tissue lipolysis through either the beta-1 or beta-2 adrenergic receptor. Because the beta-1 adrenergic receptor appears to be the most common adrenergic receptor type in adipose tissue, Ractopamine may mediate lipolytic effects through this receptor. The Beta-1 AR may be the preferred target receptor because it is the most abundant subtype in adipocytes, but targeting the beta-2 AR should also result in reduced fat accretion. These results suggest that Ractopamine has the capacity to mediate leanness through a receptor subtype hypothesized to mediate the leanness-enhancing effects of other beta-agonists.[1]

INTENDED USE

The Ractopamine lateral flow device (LFD) is designed solely for use in preliminary screening of undiluted swine urine samples. It is a competitive inhibition immunoassay for the qualitative detection of Ractopamine. The Ractopamine LFD provides only a preliminary qualitative analytical test result. Professional judgment should be applied to any test results, particularly when preliminary positive or negative results are used. LC-MS/MS is recommended as the method of choice for confirmation of positive results obtained with the Ractopamine LFD.

INTRODUCTION

The Ractopamine LFD is a qualitative one-step competitive inhibition immunoassay for the detection of Ractopamine in animal urine. It detects the presence of Ractopamine at 2.5 ppb or higher concentrations by utilizing highly specific reactions between antibodies and Ractopamine drug.

PRINCIPLE

If Ractopamine is present in the urine sample, it competes with the immobilized Ractopamine conjugate in the test area for the antibody binding sites on the colloidal gold labeled antibody complex. If a sufficient amount of Ractopamine analyte is present, it will fill all of the available binding sites, thus preventing attachment of the labeled antibody to the Ractopamine conjugate. If an obvious colored line is not visible in the Test Line region, Ractopamine is likely present at levels of concern.

The formation of two visible lines indicates a negative test result or a concentration of Ractopamine less than the established cutoff level.

WARNINGS AND PRECAUTIONS

1. This test is for preliminary *screening* use.
2. Prior to use, ensure that the product has not expired by verifying that the date of use is prior to the expiration date on the foil pouch.
3. The foil pouch containing the test device must remain completely sealed before use. Do not use if foil pouch seal is not intact.
4. Avoid cross-contamination by using a new pipet tip for each sample.
5. Do not reuse test device.
6. The Control Line must develop on all test devices to be valid.

STORAGE

The Ractopamine LFD may be stored at room temperature (15° to 30°C) or refrigerated (2° to 8°C) if available (optional). The test devices and samples must be at room temperature before use.

Starter Kit (Catalog No.: RT-STK-LFD-U-IDS)
Reusable equipment. Purchase separately.

1. 100 µL Minipet pipettor
2. Timer single channel

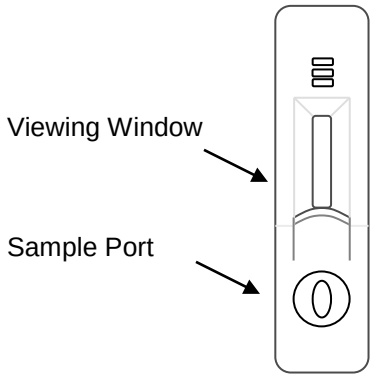
Ractopamine Kit contents - 1 sample per Test Device.

Item Description	Cat No. RT-LFD-25-SU-IDS 25-Pack	Purpose
Ractopamine LFD test devices	25	For samples (1 per sample)
Pipet tips	25	1 per sample
Package Insert	1	

SAMPLE STORAGE

Samples may be retained for up to three days at 2-8°C. If retained for longer than three days, store at -20°C.

ASSAY PROCEDURE



1. The test devices and samples must be at room temperature before conducting any testing.

2. Remove test device from the sealed foil pouch. Using the blue MiniPet (available in Starter Kit), apply 100 µL of undiluted swine urine to the test device sample port. Use a new pipet tip for each sample to avoid cross-contamination.

3. Allow the test to develop for 10 minutes and read the result as explained below.

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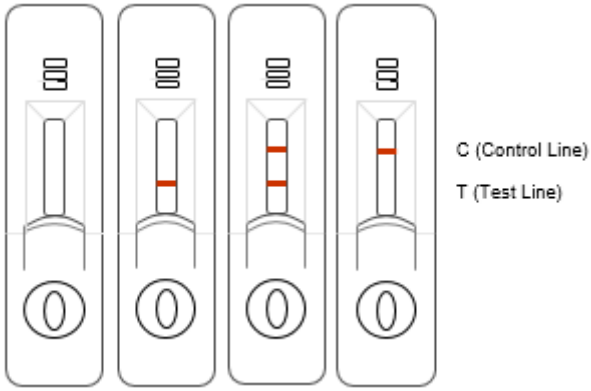
INTERPRETATION OF RESULTS

Results should be reviewed after 10 minutes. Negative test results may be visible within 2-3 minutes.



(Control line must be present for valid test)

CONTROLS

It is good laboratory practice to use positive and negative controls to ensure proper test performance. If available, urine samples containing known quantities of Ractopamine may be run on each lot of test devices to provide a visual reference of expected line intensity. Note: Reference samples with Ractopamine concentrations greater than the cutoff level will result in no obvious test line being formed in the test region of the LFD viewing window.

LIMITATIONS OF PROCEDURE

The assay is designed solely for testing swine urine samples. The Ractopamine LFD provides only a preliminary qualitative test result. Use another more quantitative and definitive analytical method to obtain a confirmed analytical result. Apply professional judgment to any test result, particularly when preliminary positive results are used.

BIBLIOGRAPHY

Mills, S.E., Spurlock, M.E., Smith, D.J. 2002. Beta-adrenergic receptor subtypes that mediate ractopamine stimulation of lipolysis. Journal of Animal Science 81:662-668.

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