RODENT LH +

RODENT LUTEINIZING HORMONE (ULTRA SENSITIVE) CLIA TEST KIT

PRODUCT PROFILE AND INSTRUCTIONS

INTENDED USE

The Rodent LH CLIA test KIT is an immunoassay designed for the quantitative determination of luteinizing hormone (LH) in serum/plasma samples of Rodents and related species. The test is intended for professional use as a research tool in the monitoring of physiological/pathological conditions related to circulating LH in rodents.

INTRODUCTION

Luteinizing Hormone (LH) and Follicle-Stimulating Hormone (FSH) are intimately involved in the control of the growth and reproductive activities of the gonadal tissues, which synthesize and secrete male and female sex hormones. The levels of circulating FSH and LH are controlled by these sex hormones through a negative feedback relationship. LH is a glycoprotein secreted by the basophilic cells of the anterior pituitary. Gonadotropin-release hormone (GnRH or LHRH), produced in the hypothalamus, controls the release of LH and FSH from the anterior pituitary. Like other glycoproteins FSH, TSH, and hCG, LH consists of two subunits alpha and beta. All these hormones have structurally similar alpha subunit, unique beta subunit which determines the biological and immunological properties. In the male the hormone binds to Leydig cells and enhances the secretion of male hormone Testosterone. The LH binds to the theca cells and stimulates steroidogenesis in the ovary. Increased intraovarian Estradiol production occurs as follicular maturation advances, thereupon stimulating increased FSH receptor activity and FSH follicular binding. FSH, LH, and Estradiol are therefore intimately related in supporting ovarian recruitment and maturation in females.

TEST PRINCIPLE

The LH CLIA Test Kit is based on the principle of a solid phase enzyme-linked immunosorbent assay. The assay system utilizes a polyclonal anti-LH antibody for solid phase (microtiter wells) immobilization and mouse anti-LH antibody in the antibody-enzyme (horseradish peroxidase) conjugate solution. The test sample is allowed to react simultaneously with the two antibodies, resulting in LH molecules being sandwiched between the solid phase and enzyme-linked antibodies. After 2 hours incubation, the wells are washed with wash buffer to remove unbound labeled antibodies. A freshly prepared solution of CLIA Reagent is added and incubated for 2 minutes, resulting in the light development. The light intensity (RLU) is measured in a 96 well CLIA reader. The intensity of light developed is proportional to the amount of enzyme present and is directly related to the amount of unlabeled LH in the sample. By reference to a series of LH standards assayed in the same way, the concentration of LH in the unknown sample is quantified.

MATERIALS PROVIDED

1. Antibody-coated microtiter wells, 96-well plate
2. Enzyme Conjugate diluent, 12 mL
3. CLIA Reagent A and B, 6mL
4. 20X Wash buffer, 20 mL each
5. Standard/Sample Diluent , 20 mL
6. Reference Standard/Ready to use/0.5mL/Vial
   (0,. 0.05, 0.1, 0.5, 2.5, 5.0 ng/mL, store frozen –20C)
7. **Instructions**

MATERIALS REQUIRED, BUT NOT PROVIDED

1. Precision pipettes: 50uL, 100uL, 200uL, and 1.0mL
2. Disposable pipette tips
3. Distilled water
4. Glass tubes or flasks to prepare TMB Solution
5. Vortex mixer or equivalent
6. Absorbent paper or paper towel
7. Graph paper
8. Microtiter plate reader

SPECIMEN COLLECTION AND PREPARATION

Serum should be prepared from a whole blood specimen obtained by acceptable medical techniques. This kit is for use with serum or plasma samples only.

STORAGE OF TEST KIT AND INSTRUMENTATION

Note of Caution: Immediately after receiving the kit all standards, if not used, should be kept at -20^{O}C. Unopened test kits should be stored at 2-8^{O}C. The microtiter plate should always be kept in a sealed bag with desiccants to minimize exposure to damp air at room temperature. Opened test kits will remain stable until the expiration date shown, provided it is stored as prescribed above. Do not leave any reagents at room temperature more than 3 hours.

A microtiter plate reader with a bandwidth of 10nm or less, with a bandwidth of 10nm or less and an optical density range of 0-3 OD or greater at a 450nm wavelength is acceptable for use in absorbency measurement.

REAGENT PREPARATION

ALL REAGENTS MUST BE DISSOLVED COMPLETELY BEFORE ASSAYING IN THE CLIA ASSAY.

1. All reagents should be brought to room temperature (18-25^{O}C) before use.
2. To prepare the wash buffer add one part of the reagent buffer to 19 parts of distilled water. Prepare desired amount and excess solution can be stored (refrigerated) and is stable for one week.
3. Ready to use Standards should be kept frozen, if not used immediately.
4. Concentrated sample should be diluted using sample diluent provided (1:2 or 1:4 ect.,)
5. Prepare CLIA Reagent A and B by mixing 1:1 3 minutes before use and store at dark.

ASSAY PROCEDURE

<u>One must follow accurately these steps to ensure correct results. Use clean pipettes and sterile, disposable tips:</u>

1. Secure the desired number of coated wells in the holder.
2. Dispense 10ul of standards, specimens, and controls into appropriate wells into each well. Shake for 30 seconds. It is very important to shake the plate at this step.
3. Dispense 100ul of Enzyme conjugate solution..
4. Incubate at 37^{O}C for 2 hours.
5. Remove the incubation mixture by dumping plate contents into a waste container.
6. Rinse and dump the microtiter wells five (5) times with wash buffer.
7. Strike the wells sharply onto absorbent paper or paper towels to remove all residual water droplets.
8. Dispense 100ul of freshly prepared CLIA solution into each well and gently mix for 10 seconds.
9. Incubate at room temperature for 2 minutes, in the dark.
10. Read light intensity in a CLIA 96 well reader.

Important note: The wash steps are very critical. Insufficient washing will result in poor precision and falsely elevated absorbency readings.

CALCULATION OF RESULTS

Calculate the mean light intensity (RLU) for each set of reference standards, specimens, controls and patient samples. Construct a standard curve by plotting the mean absorbency obtained from each reference standard against its concentration in ng/ml on graph paper, with absorbency values on the vertical or Y axis, and concentrations on the horizontal or X axis. Use the mean absorbency values for each specimen to determine the corresponding concentration of LH in pg/ml from the standard curve.

EXPECTED VALUES AND SENSITIVITY

Each laboratory must establish its own normal ranges based on your laboratory animals. The minimal detectable concentration of Rat Luteinizing hormone by this assay is estimated to be about 50pg/ml.

Limitations & Warranty

The present CLIA is designed for helping the scientist to analyze test samples only. There are no warranties, expressed, implied or otherwise indicated, which extend beyond this description of this product. Endocrine Technologies, Inc. is not liable for property or laboratory damage, personal injury, or test samples loss, or economic loss caused by this product. Warranty is limited to replacement of similar CLIA Kit damaged during shipment or leaking solutions within 30 days, with written explanation and return of the CLIA product. The analyst should establish the standard curve and a small number of samples before proceeding to analyze a large number of samples.

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Revised 07182011-3

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