Technical Manual

Human Prolactin ELISA Kit

- Catalogue Code: HDES0094
- Antibody ELISA Kit
- Research Use Only

1. Test principle

This ELISA kit uses Sandwich-ELISA as the method to detect the prolactin (PRL) in human serum. The ELISA Microtiter plate provided in this kit has been pre-coated with PRL monoclonal antibody. Add samples to the ELISA Microtiter plate wells, then add HRP conjugated anti-PRL. The PRL in samples will be combined with the anti- PRL antibody, and the combined PRL will then specifically combine with the HRP conjugated anti- PRL. Free components are washed away. The substrate reagent is added to initiate the color developing reaction. The presence of PRL can be determined according to the absorbance value by using a microplate reader with 450 nm (630 nm) wavelength.

2. Kit components

Item	Specifications
ELISA Microtiter plate	96 wells
Standard Liquid	0.5 mL each (0 μIU/mL, 40 μIU/mL, 100 μIU/mL, 300 μIU/mL, 800 μIU/mL, 2000 μIU/mL)
20×Concentrated Wash Buffer	15 mL
HRP Conjugate	6 mL
Quality Control	0.5 mL (2 level) ×2
Substrate Reagent A	7 mL
Substrate Reagent B	7 mL
Stop Solution	7 mL
Plate Sealer	3 pieces
Sealed Bag	1 piece
Manual	1 copy

Note: All reagent bottle caps must be tightened to prevent evaporation and microbial pollution.

3. Other materials required but not supplied

- Microplate Reader with 450 nm wavelength filter or dual-wavelength (450/630 nm)
- High-precision transferpettor, EP tubes and disposable pipette tips
- 37°C Incubator or water bath
- Deionized water
- Absorbent paper

4. Notes

1. Please read the manual carefully before use, changes of operation may result in unreliable results.
2. Wear gloves and work clothes during experiment, and the disinfection and isolation system should be strictly executed. All the waste should be handled as contaminant.
3. The stop solution is corrosive, it should be avoided to contact with skin and clothing. Wash immediately with plenty of water if contact it carelessly.
4. The ELISA Microtiter plate obtained from cold storage conditions should be adjusted to room temperature before use. The unused plate should be kept in a sealed bag with desiccant.
5. Concentrated washing liquid at low temperature condition is easy to crystallization, it should be adjusted to room temperature in order to dissolve completely before use.
6. The results shall depend on the readings of the micro-plate Reader.
7. **Each reagent is optimized for use in the HDES0094. Do not substitute reagents from any other manufacturer into the test kit. Do not combine reagents from other HDES0094with different lot numbers.**
8. Different batch numbers of reagents should not be mixed.
9. All the samples and waste material should be treated as infective material according to the relevant rules of biosafety.

5. Storage and expiry date

Store at 2-8°C. Avoid freeze.

Please store the opened plate at 2-8°C, the shelf life of the opened kit is up to 1 month.

Expiry date: expiration date is on the packing box.

6. Sample preparation

1. **Serum:** Human serum can be used as detected sample. Obviously contaminated samples can't be detected. Samples can be stored at 2-8°C for 48 h and stored at -15°C for 3 months. Avoid freeze-thaw cycle above 3 times. Freezing samples should be mixed fully before test.
2. Avoid of using hemolysis, turbidity, or lipid blood samples.
3. **Wash Buffer:** The **20×Concentrated Wash Buffer** should be adjusted to room temperature to make the sediment dissolved fully before use, then dilute it with deionized water at 1:19.

7. Assay procedure

Restore all reagents and samples to room temperature (25°C) before use. All the reagents should be mixed thoroughly by gently swirling before pipetting. Avoid foaming. The unused ELISA Microtiter plate should be sealed as soon as possible and stored at 2-8°C.

1. **Number:** number the sample and standard in order (multiple well), and keep a record of standard wells and sample wells.
2. **Add sample:** add 50 μL of **Standard, Sample** or **Quality Control** per well, set the blank control well (without adding any liquid). Then add 50 μL of **HRP Conjugate** into each well.
3. **Incubate:** gently tap the plate to mix thoroughly. Cover the ELISA Microtiter plate with sealer. Incubate for 60 min at 37°C.
4. **Wash:** remove the plate sealer and aspirate the liquid of each well. Immediately fill each well with Wash Buffer and wash. Repeat the washing procedure for 3 times and immerse for 10 sec each time. Invert the plate and pat it against thick clean absorbent paper (If bubbles exist in the wells, clean tips can be used to prick them).
5. **Add substrate:** add 50 μL of **Substrate Reagent A** and 50 μL of **Substrate Reagent B** to each well. Gently tap the plate to mix thoroughly. Cover with a new plate sealer. Incubate for 15 min at 37°C in shading light.
6. **Stop reaction:** add 50 μL of **Stop Solution** to each well, gently tap the plate to mix thoroughly.
7. **OD Measurement:** set the Microplate Reader wavelength at 450 nm to detect A value of each well, zero set with blank well (or not set blank well, set the Microplate Reader dual-wavelength at 450/630 nm to detect A value of each well).

8. Result analysis

1. Create a standard curve by plotting the absorbance of each standard on the y-axis against the concentration on the x-axis, and set double log fit to draw a standard curve. Add average absorbance value of sample to standard curve to get corresponding concentration.

9. Reference value

Normal reference: male: 75-350 μIU/mL, female: 65-660 μIU/mL.
Due to differences in geography, race, gender and age, it is recommended that each laboratory establish its own reference value (range).

10. Product performance

1. **Accuracy:** Simultaneously analyze and determine the standard liquid of the test kit and the

corresponding concentration of the national standard substance, fit with double log, it is require that two dose-response curves not deviate significantly from parallelism (t-test). Using PRL national standard substance (No. 150532) as the reference, the ratio of the measured concentration to the labeled concentration of the standard liquid should be within the range of 0.90-1.10.

2. **Limit of detection:** should not be more than 50 μIU/mL.
3. **Linear range:** in the range of [40 μIU/mL, 2000 μIU/mL], the correlation coefficient r≥0.990.
4. **Repeatability:** CV ≤ 15%.
5. **Inter-batch difference：** CV ≤ 15%.
6. **Quality control measurement value:** Each test result should be within the allowable range.
7. **Specificity:** There was no significant cross-reaction with follicle stimulating hormone (FSH), luteinizing hormone (LH), human chorionic gonadotropin (HCG), growth hormone (GH), and placental prolactin (HPL). Prepared high concentrations of FSH, LH, HCG, GH, and HPL solutions, and the measurement results should conform to the table below.

Substance	Sample concentration	Measured value
FSH	1000 mIU/mL	≤ 50μIU/mL
LH	1000 mIU/mL	≤ 50μIU/mL
HCG	100 IU/mL	≤ 50μIU/mL
GH	100 ng/mL	≤ 100μIU/mL
HPL	50 ug/mL	≤ 100μIU/mL

11. Limitations of this test method

1. This product can only be used for the determination of serum samples and can not be used for other body fluid samples.
2. To avoid interfering with the results, serum with high blood lipids and hemolysis should be avoided. Samples with obvious contamination should not be used for testing as they may lead to erroneous experimental results.
3. When the sample concentration reached 16mIU/mL, there was no HOOK effect observed.

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