

Instruction for Thyroxine (T4) Test Kit (Immunofluorescence)

1. PRODUCT NAME

Generic name: Thyroxine (T4) Test Kit (Immunofluorescence)

Trade name: T4.

2. PACKAGE

Specification 1: 25T/kit REF: 52026015

Specification 2: 50T/kit REF: 52027015

Quality Control (optional):

Level 1: 0.5mL × 1 REF: 52105047

Level 2: 0.5mL × 1 REF: 52105048

Level 3: 0.5mL × 1 REF: 52105049

3. INTENDED USE & INDICATION

For in vitro quantitative determination of T4 level in human serum, plasma or whole blood. It is mainly used to assist in the diagnosis of thyroid diseases.

For professional use only.

4. TEST PRINCIPLE

Mix the blood sample with the diluent, then add mixture onto the sample port of the test card, T4 in the sample binds with anti-T4 monoclonal antibody, which is coupled to fluorescent particles, to form a fluorescent particles - antibody - antigen complex. This immune complex migrates along the nitrocellulose membrane and reaches the test area (T). The fluorescent particles – antibody which didn't bind with the antigen will then bind the pre-coated T4 conjugated antigen. The fluorescence intensity is thus inversely proportional to the T4 level in the sample. The remaining antibody coupled with fluorescent particles reaches the quality control area (C) and binds pre-coated Rabbit IgG for the control purpose.

5. MAIN COMPONENTS & ADDITIONAL REQUIRED EQUIPMENT

The test kit consists of test card, magcard, sample diluent, quality control (optional) and the instruction.

(1) The test card consists of card shell and test strip. The test strip contains sample pad, glass fiber, nitrocellulose membrane, absorbent paper and PVC plate.

(2) Magcard: load calibration curve information for this batch of reagents.

(3) Sample diluent: the main ingredient is Tris-HCl buffer. It is portioned into 0.6 mL per tube for each test.

(4) Quality control (optional): Self-prepared lyophilized powders, mainly consist of T4 recombinant antigen and phosphate buffer (PBS). All are free of human-derived substances and have batch specificity. Please find target values in the target value list.

(5) Equipment: applicable to FA50 and FA120 Quantitative Immunoassay Analyzer manufactured by Genrui Biotech Inc.

Note: Components of kits from different batches should not be used interchangeably.

6. ACCESSORIES REQUIRED BUT NOT PROVIDED

(1) Pipettes and pipette tips: 100 µL

(2) Timer

7. SPECIAL STORAGE & TRANSPORT CONDITIONS

(1) The test kit should be stored at 2-30°C, and the shelf life of test cards and sample diluent is 18 months when sealed. After the test card and sample diluent are opened, the shelf life is 1 hour at 18-30°C and 40%-65% humidity. When the humidity is > 65%, it should be used right after opened.

(2) The unopened QC is stable for 18 months (see the label for specific date) at -25°C to 8°C, the reconstituted QC is stable for 6 days at -20°C or 3 days at 2-8°C in the shade,

and can be freeze-thawed once.

(3) Transport: The test kit is at 2-30°C, the QC is at -25°C-8°C.

8. SAMPLE REQUIREMENTS

(1) The optimal sample is fresh non-hemolyzed serum, plasma or whole blood. It is recommended to use sample from venous blood, as results of other body fluids and samples may not be accurate.

(2) Serum/plasma: After sample collection, serum should be separated as soon as possible to avoid hemolysis. Serum and plasma should complete the test within 24 hours at room temperature. The samples that cannot complete the test should be refrigerated at 2-8°C for no more than 7 days; serum and plasma should be frozen below -18°C for no more than 1 month.

(3) Whole blood: It should be used immediately after collection. If it cannot be tested within 24 hours, it should be refrigerated at 2-8°C for no more than 3 days. Samples should not be frozen.

(4) The samples should be brought to room temperature before determination. The frozen samples should be completely thawed, rewarmed and mixed well before use. Do not freeze and thaw repeatedly.

(5) Human serum is preferred for determination, and EDTA-K₂ is recommended as an anticoagulant for plasma and whole blood testing.

9. TEST METHOD

Carefully read the instruction before using the test kit and strictly follow the instruction to ensure reliable results. Bring all reagents to room temperature (18-30°C) before use.

(1) Startup: Click "STD Mode" in the main menu to enter the measurement interface, click "Item" to select the test item and click "Type" to select the sample type.

(2) Click "Lot No." to enter the card reading interface, place magcard of the corresponding item to the magnetic card reader area, when the magcard is read successfully, check whether the magcard and the test card are of the same batch. (Note: reagents are precalibrated and specific calibration curve parameters for each batch of reagents have been stored in the magcard.)

(3) Quality control procedure: It is recommended to refer to the instrument manual and use the Genrui quality control to verify whether the target value of the test quality control is under control during the measurement procedure after calibration. The quality controls should be used as follows.

a) Bring the quality control to room temperature (18-30°C) before use.

b) Carefully open the bottle cap to avoid spraying of the contents.

c) Add 0.5 mL of purified water.

d) Put on the bottle cap and leave it at room temperature for 15 minutes, gently shake the bottle to fully dissolve the dry powder.

e) After the dry powder is fully dissolved, repeat the operation for the sampling.

If the measured values of quality controls are within the given range of target values, the determination of clinical samples and data analysis can be continued; otherwise, the causes should be identified before test.

(4) Sampling:

Add 0.1mL of serum, plasma or whole blood into the container with sample diluent, mix thoroughly for 40-60s. Take 0.1mL of diluted sample, and drop it vertically to the sample well on the test card directly and start timing.

(5) Insert it into the analyzer's test card slot (the sample well end towards the inside). Click "Measure", the instrument will automatically detect and print out the results after

15 minutes (If using "Fast Mode", after 15 minutes of external incubation, quickly insert card and click "Measure", then instantly the instrument will detect and print out the results).

Note: For detailed instructions on how to operate the instrument, please refer to the manual of Quantitative Immunoassay Analyzer.

10. REFERENCE RANGE

Reference range: 66-181 nmol/L

Note: Due to geographical, ethnic, gender and age differences, it is recommended that each laboratory establishes its own reference range.

11. EXPLANATION FOR TEST RESULTS

(1) When the control area (C) appears fluorescent strips, the analyzer will automatically detect the fluorescence and analyze the test card, and then provide quantitative results.

(2) When the control area (C) does not appear fluorescent strips, the analyzer cannot detect the fluorescence and alarm will be activated automatically, indicating that the operation is incorrect or the test card is damaged. In this case, carefully read the instructions again and re-test with a new test card, if the problem still exists, immediately stop using products of this batch and contact your supplier.

(3) When the measured value of the sample is higher than 320 nmol/L, the instrument shows > 320 nmol/L, and when the measured value of the sample is less than 12 nmol/L, the instrument shows < 12 nmol/L.

(4) This test kit does not produce Hook Effect within 320 nmol/L.

12. DETECTION LIMIT

(1) This test kit is for in vitro diagnostic use only.

(2) Diagnosis and treatment can not solely base on this test result, please taking into account the clinical history and other laboratory test results. Each laboratory is recommended to establish its own reference range based on its patient population.

13. INTERFERING SUBSTANCE

(1) High concentrations of hemoglobin, bilirubin, cholesterol, triglyceride, HAMA, and rheumatoid factor in the sample interfere with the assay results.

14. PRODUCT PERFORMANCE INDICATORS

(1) Analysis sensitivity: ≤ 12 nmol/L

(2) Linearity range: 20-320 nmol/L (Linear correlation coefficient: $r \geq 0.9900$)

(3) Precision: intra-batch precision: $CV \leq 12\%$; inter-batch precision of the kit $CV \leq 15\%$

(4) Accuracy: $-15\% \leq \text{Bias}\% \leq +15\%$

(5) Specificity: The test results of TT3 at a concentration of 500 ng/mL, rT3 at a concentration of 50 ng/mL from this kit should not be higher than 15 ng/mL (19.3 nmol/L)

(6) QC precision: $CV \leq 15\%$

(7) Expected results of QC: the test results shall be within the target range

(8) Moisture content: the moisture content of the QC (lyophilized powder) is $\leq 10\%$

15. PRECAUTIONS

(1) Once opened, use the test cards as soon as possible, which may be exposed to moisture in the air. Do not reuse the test cards.

(2) Components in test kit of different batches cannot be used interchangeably.

(3) For substances containing sources of infection or suspected of containing sources of infection, there should have proper bio-safety assurance procedures. Pay attention to the following notes:

-- Wear gloves when handling sample or disinfecting the reagent.

-- Disinfect spilled sample or reagent with disinfectant.

-- Disinfect or handle potential contamination sources of all samples or reagents in accordance with local regulations.

16. EXPLANATION OF GRAPHIC SYMBOL

	Consult instructions for use		Temperature limit
	Batch code		Use-by date
	In vitro diagnostic medical device		CE Marking
	Date of manufacture		Biological risks
	Manufacturer		Volume
	Contains sufficient for < n>tests		Keep away from sunlight
	Do not re-use		Keep dry
	Authorized representative in the European community		Catalogue number

17. REFERENCE

(1) Evaluation of Precision Performance of Quantitative Measurement Methods; Approved Guideline-Second Edition. CLSI document EP5-A2. CLSI, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898, USA, 2004.

(2) Wosilait WD. A theoretical analysis of the distribution of thyroxine among sites on thyroid binding globulin, thyroid binding prealbumin and serum albumin. Res Commun Chem Pathol Pharmacol 1977; 16.

18. METROLOGICAL TRACEABILITY

The kit is traceable to the certified reference material IRMM-468.

19. HELP INFORMATION

If you need help, please contact after sales department.

20. MANUFACTURER

Genrui Biotech Inc.

Address: 4-10F, Building 3, Geya Technology Park, Guangming District, 518106, Shenzhen, China.

21. INSTRUMENTS & APPLICATIONS

Genrui's Immunofluorescence products are designed to work in automated lab, which are compatible with the FA50/FA120 Quantitative Immunoassay Analyzer. There may or may not be an application developed for your particular instrument, please visit the instrument section of our website.



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