

Interleukin-6(IL-6) Quantitative Test Cassette

(Quantum Dot Fluorescence Immunochromatography)

Instruction For Use



In Vitro Diagnosis
For Professional Use

【Product Name】

Interleukin-6 (IL-6) Quantitative Test Cassette (Quantum Dot Fluorescence Immunochromatography)

【Package Specification】

25 tests/kit

【Intended Use】

For in vitro quantitative detection of Interleukin-6 (IL-6) concentration in human whole blood, serum and plasma.

IL-6 is an important indicator for early screening of acute infection. In the inflammatory response, IL-6 rises earlier than other cytokines as well as CRP and PCT, and lasts for a long time, so it can be used to assist in the early diagnosis of acute infection. The increase in IL-6 is positively correlated with the severity of the disease, and the amplitude of the increase reflects the severity of the disease. Sustained high-level expression for a long time in critically ill patients can be used as a sensitive indicator to evaluate the severity and prognosis of patients with sepsis and MODS.

【Test Principle】

This kit adopts the principle of fluorescence immunochromatography and uses a double-antibody sandwich method to quantitatively detect the concentration of interleukin-6 (IL-6) in human whole blood, serum and plasma. IL-6 antibody is coated in the detection line (T) area of nitrocellulose membrane (NC membrane), and sheep anti-chicken IgY antibody is coated in the quality control line (C) area, coupled with IL-6 antibody immobilized with quantum dot labeling and chicken IgY probe pads. The specimen to be tested is added to the sampling hole of the test card, as the liquid flows, specimen to be tested first passes through the sample pad and forms a fluorescent complex with the probe pad fixed with quantum dot-labeled antibodies. The complex passes through the detection line and quality control lines, specifically immunobind with the antibodies in the detection line and quality control line respectively, and are captured by the coating antibodies on the nitrocellulose membrane to present fluorescent bands.

Intensity of the fluorescence signal reflects the amount of captured IL-6. The higher the concentration of interleukin-6 (IL-6) in the sample, the more accumulated complexes on the detection line, the higher signal intensity will be tested out. Use a fluorescence immunoassay analyzer to analyze the photoelectric values of the quality control line and detection line, then the analyzer calculates the concentration of IL-6 based on the calibration curve that has been preset inside the analyzer and displays the result in pg/mL.

【Main Material】

Main Material as below:

- 25 Test cassettes
- 25 Deliver pipettes
- 1 Bottle of diluent
- 1 ID Card
- 1 User Manual

Material Required but not Provided:

1. Timer, thermometer, hygrometer;

Note: Components of different batches of reagent kits cannot be used interchangeably to avoid incorrect results.

【Storage Conditions and Validity Period】

1. The test kit should be stored at 2~30°C, protected from light, and has a

shelf life of 18 months.

2. The test cassette should be used within 1 hour after opening at a temperature of 10°C to 30°C and a humidity of 35% to 65%.

【Applicable Analyzer】

Dry fluorescence immunoassay analyzer GKYG-500 produced by Dezhou Guoke Medical Technology Co.,Ltd.

【Specimen Requirement】

1. Suitable for human serum, plasma or whole blood samples, serum and plasma samples are recommended to be prioritized. Hemolyzed specimens cannot be used. All specimens should be treated as infectious agents.
2. Whole blood and plasma samples are allowed to be treated with heparin, EDTA or sodium citrate anticoagulant .
3. Whole blood, serum and plasma specimens should be stored at 18 to 28°C for no more than 1 day. If the specimen is free of bacterial contamination, it should be stored at 2 to 8°C for no more than 3 days, and at -20°C for no more than 1 month, repeated freezing and thawing should not occur more than 3 times. Frozen specimens should be thoroughly mixed after thawing.
4. If the sample contains particulate matter, it will affect the test results. Samples containing visible particles should be centrifuged and the supernatant should be taken for experiments.
5. Do not test samples from patients with severe hemolysis, lipemia and jaundice.
6. The specimen must be restored to 10°C~30°C before testing. Frozen and preserved specimens must be completely thawed, rewarmed, and mixed evenly before use.

【Test Procedure】

1. When stored at low temperature, the test kit and diluent should be restored to 10°C~30°C before use.
2. Turn on the analyzer according to the analyzer instruction manual.
3. Take out the ID card from the kit and read the ID card information at the card reading position of the fluorescence immunoassay analyzer.
4. Tear open the outer packaging, take out the test cassette, and place it flat on the operating table. The removed test cassette should be used within 1 hour.
5. If the sample is serum or plasma, use a pipette to aspirate 100µL of the sample; if the sample is whole blood, use a pipette to aspirate 100µL of the sample, then vertically drop it into the sample well of the reagent card. Immediately add a drop of sample diluent into the sample well.
6. Immediately insert the test cassette into the fluorescence immunoassay quantitative analyzer at 15 minutes of reaction, click the "Detect" button, the test results will automatically be displayed on the instrument screen, and the results can be saved and printed.
7. Used test cassettes should be treated as potentially biohazardous items.
8. Quality control:
 - 1) C line is used as an indicator of the effectiveness of the test cassette, C line should appear in any cases.
 - 2) The company's internal quality control products or other approved and applicable quality control products can be used to conduct quality control on the product. The test results should be within the specified quality control range.

Note: The experiment should be completed at a temperature of 10°C to 30°C and a humidity of 35% to 65%.

【Positive Judgment Value or Reference Interval】

The recommended reference interval for this cassette is < 7 pg/mL; The reference value is verified with reference to similar products on the market. Due to racial and regional differences, each laboratory can establish its own reference interval based on actual conditions.

【Interpretation of Test Results】

1. If the whole blood, serum and plasma/ sample is turbid, it will affect the flow rate of the sample, resulting in prolonged detection time or failure to detect, resulting in possible erroneous detection results. Please centrifuge and discard the sediment before use.
2. The accuracy of the sample amount will directly affect the accuracy of the

test results.

3. Please check the integrity and expiration date of the kit package before use, then open the package. Low-temperature storage should be restored to 10°C~30°C before opening the package for use. Direct use at low temperatures will affect the test results.

4. Whether the patient has an inflammatory bacterial infection should be comprehensively judged by the physician based on the clinical characteristics and symptoms, as well as the patient's other diagnostic methods.

【Limitations of Detection Method】

This kit is a fluorescence immunochromatography diagnostic kit and has inherent methodological limitations:

1. The test results can only be used as an auxiliary for doctors or other diagnoses and need to be combined with other clinical and laboratory data. If the test results are inconsistent with the clinical assessment, further examination is required.
2. Hemoglobin in hemolyzed samples is ≤ 4 mg/mL, bilirubin in jaundice samples is ≤ 0.2 mg/mL, and triglycerides are ≤ 10 mg/mL. The deviation of the test results is within $\pm 15\%$.
3. When the concentration of IL-6 in the sample is ≤ 4000 pg/mL, the HOOK effect will not occur.

【Product Performance Indicator】

1. Appearance inspection: The product and outer packaging should be clean and smooth, with clear markings, complete components, and strong material attachment.

2. Migration speed: The liquid migration speed should not be less than 10mm/minute.

3. Linear range:
In the range of 3 pg/mL ~ 4000pg/mL, the Liner Correlation Coefficient(R) value should be ≥ 0.990 .

4. Accuracy
Use company's internal control accuracy reference products (C1, C2) to test, and the test results should be within the following range:

1) Using company's internal control accuracy reference product C1: 50pg/mL for testing, the analyzer's measurement range is 50pg/mL $\pm 15\%$ at 15 minutes;

2) Using company's internal control accuracy reference product C2: 250pg/mL for detection, the analyzer's measurement range is 250pg/mL $\pm 15\%$ at 15 minutes;

5. Intra-Lot precision
Use the company's internal control precision reference materials (C9: 50 pg/mL, C10: 250 pg/mL) for 10 parallel tests each, and measure with the analyzer at 15 minutes. The concentration value variation coefficient CV $\leq 15\%$.

6. Inter-Lot precision
For the three batches of kits, the company's internal control precision reference materials (C9: 50 pg/mL, C10: 250 pg/mL) were tested 10 times in parallel. The analyzer measured the concentration value at 15 minutes, and the concentration value variation coefficient CV $\leq 15\%$.

7. Detection limit
Use the company's internal control detection limit reference product L1 to test, and measure with the analyzer at 15 minutes. The result should be ≤ 3 pg/mL.

8. Specificity
Using the company's internal control specific reference materials (C3, C4, C5, C6, C7, C8) to detect, the measured values of the analyzer should be less than 3 pg/mL at 15 minutes.

【Precautions】

1. This kit is only for in vitro diagnosis, one-time use, please do not re-use.
2. The test kit should be treated as contain infectious material.
3. Please check the integrity and expiration date of the kit packaging before use.
4. Please read the instructions for use of this reagent and instrument carefully before any operation.
5. Please strictly follow the instructions. After the test starts, it cannot be stopped in halfway. If it is stopped halfway, the test cannot be resumed. If a retest is needed, use new reagents and retested.

6. Each batch of reagents has corresponding parameters in the supporting analyzer, and the manufacturer regularly updates the parameters in the analyzer. If the new batch of product reagents is not recognized by the analyzer, please contact the manufacturer in time to update the parameters.
7. The test cassette shall not be used after more than 1 hour after opening.
8. Reagents with different batch numbers cannot be mixed, and ID cards and test cassettes must not be used with mixed batch numbers.
9. The experimental environment should be avoided from being too high. Test cassettes stored at low temperature need to be returned to room temperature before opening to avoid moisture absorption.

Code:GKPD051-1 Effective date: May,31,2024

【Index of Symbols】

	For in vitro diagnostic use only		Do not reuse
	Expiry date		See instruction for use
	Warning, please refer to the instructions in the annex		Manufacturer
	Temperature scope within which the product is reserved		Batch number
	Catalog #		Tests / box
	European union authorized representative		Keep dry
	Keep away from sunlight		Don't use the product when the package is damaged
	Biological risks		
	The product meets the basic requirements of European in vitro diagnostic medical devices directive 98/79/EC		

Manufacturer:



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