Plasma/Serum test for glutamic pyruvic transaminase (alanine aminotransferase)

FUJI DRI-CHEM SLIDE GPT/ALT-PIII

[Warnings and precautions]
1. Only the required number of slides should be taken out of the refrigerator and warmed up to room temperature before opening the individual packages.
2. Do not touch either the center part of the slide or the back of the slide.
3. A new slide must be used for each measurement. Do not reuse.
4. Handle all patient specimens, control serum and used tips carefully as biohazardous samples. Wear proper glasses, gloves and other protective gear for your safety.
5. Used slides are categorized as infectious waste. Make sure to dispose them in accordance with the Waste Disposal Law and other related regulations, which prescribe the proper method of disposal, such as incineration, melting or sterilization.

[Composition of the slide]
1. Multi-layered structure

   - Specimen
   - Spreading layer
   - Reagent layer
   - Transparent support

2. Ingredients per slide
   - L-Alanine: 0.44 mg (4.9 μmol)
   - α-Ketoglutaric acid disodium salt: 0.064 mg (0.28 μmol)
   - Potassium phosphate: 0.072 mg (0.53 μmol)
   - Pyruvate oxidase: 0.54 U
   - Peroxidase: 2.4 U
   - Diarylidyazolide leuco dye: 0.044 mg (0.09 μmol)

[Intended use]
Quantitative measurement of glutamic pyruvic transaminase (alanine aminotransferase) activity in plasma or serum.

For in vitro diagnostic use only.

[Principle of the measurement]
10 μL of plasma or serum is deposited on a FUJI DRI-CHEM SLIDE GPT/ALT-PIII. The slide is incubated at 37 °C and GPT in the sample catalyses the amino-transfer reaction with the substrate of L-alanine after spreading uniformly in the spreading layer. Pyruvic acid produced by the reaction generates hydrogen peroxide by pyruvate oxidase (POD). Hydrogen peroxide oxidizes diarylidyazolide leuco dye by the catalytic reaction of peroxidase (POD) and forms a blue color dye. The increase of absorbance by the generated dye is measured from 2.5 min to 4 min at 650 nm by reflective spectrophotometry and the GPT activity is calculated according to the installed formula.

L-Alanine + α-Ketoglutaric acid → GPT → Pyruvic acid + L-Glutamic acid

Pyruvic acid + O₂ + Phosphoric acid + H₂O → H₂O₂ + Acetyl phosphate + CO₂

Diarylidyazolide leuco dye + H₂O₂ → Blue color dye + 2H₂O

[Additional special equipment]
Analyzer: FUJI DRI-CHEM ANALYZER
Other implements: FUJI DRI-CHEM QC CARD (attached)
   : FUJI DRI-CHEM CLEAN TIPS or FUJI DRI-CHEM AUTO TIPS
   : FUJI DRI-CHEM SLIDE

[Specimen requirements]
1. After collecting the blood sample, immediate measurement is recommended.
2. For plasma, heparin can be used as the anticoagulant. When using heparin, collection of blood sample should be immediately performed.
3. Avoid using plasma or serum with precipitate such as fibrin.
4. Do not use hemolytic plasma or serum.
5. When the measured value exceeds the upper limit of the dynamic range, dilute the sample with distilled water or saline. The data obtained by dilution may deviate more widely than usual, the data should be treated as estimation.

[Procedure]
1. Read in the new QC-card when you switch to a new box of slides.
2. Set slides on FUJI DRI-CHEM ANALYZER.
3. Set a sample tube in the specified sample rack.
4. Input a sequence No. and a sample ID if appropriate.
5. Press the "START" key to initiate testing.

For further details of operation procedure, consult "INSTRUCTION MANUAL" for FUJI DRI-CHEM ANALYZER.

[Reference interval]
4–44 U/L (JSCC* standard method, 37 °C) (0.07–0.73 μkat/L)

As the reference intervals depend on the population of the test, it is required that each laboratory set its own reference intervals. The clinical diagnosis must be made by the doctor in charge based on the measured results in the light of clinical symptoms and other test results.

*Japan society of clinical chemistry (JSCC) method does not include pyridoxal phosphate (PALP).

[Performance characteristics]
1. Dynamic range
   - 10–1000 U/L (0.17–16.70 μkat/L)
2. Accuracy
   - Concentration range: 10–30 U/L
     - Within ± 6 U/L
   - Concentration range: 30–1000 U/L
     - Within ± 20 %
3. Precision
   - Concentration range: 10–60 U/L
     - SD ≤ 3 U/L
   - Concentration range: 60–1000 U/L
     - CV ≤ 5 %
4. Correlation
   - Correlation was evaluated between JSCC standard method, 37 °C and FUJI DRI-CHEM system. JSCC standard method was run on a HITACHI automated analyzer. This examination was carried out at the laboratory of FUJIFILM Corporation.

5. Known interfering substances
   - (1) Dobutamine hydrochloride (cardiotonic reagent) and dopamine hydrochloride (cardiotoxic reagent) give minus bias.
   - (2) The effects on the measured value were examined by adding substances as shown below to a serum sample obtained from a healthy volunteer or a control serum. No significant effect was observed to the following concentration for each substance.
     - Ascorbic acid: 0.57 mmol/L
     - Bilirubin: 340 μmol/L
     - Pyruvic acid: 0.23 mmol/L
     - Total protein: 40–95 g/L
   - These results are representative;
     - Test condition may have some influence on your results.
     - Interferences from other substances are not predictable.

[Internal quality control]
The accuracy and precision of this product can be evaluated with FUJI DRI-CHEM CONTROL QP-L and/or QP-H.

1. Select control level in accordance with your purpose.
2. Measure FUJI DRI-CHEM CONTROL QP-L and/or QP-H in the same way as specified in the "INSTRUCTION MANUAL" for FUJI DRI-CHEM ANALYZER.

3. Precision: 10–30 U/L Within ± 6 U/L
4. Correlation: 30–1000 U/L Within ± 20 %
5. When the results obtained are outside the expected range shown in the sheet attached to FUJI DRI-CHEM CONTROL QP-L or QP-H, investigate the cause.

[Traceability of calibrators and control materials]
GPT...ReCCS (ERM): Reference Material Institute for Clinical Chemistry Standards

[Storage and shelf life]
1. Storage: This product must be stored between 2–8 °C (35.6–46.4 °F) before use.
2. Expiry date is printed on the carton.
3. Use immediately after opening the individual package.

[Contents]
- Slide : 24
- QC card : 1

FUJIFILM Corporation
26-30, Nishiazabu-2-Chome, Minato-ku, Tokyo 106-8620, JAPAN

FUJIFILM Europe GmbH
Heesestrasse 31, 40549 Düsseldorf, GERMANY