D-Serine Assay Kit (ELISA)

Cat. No. KITG-052 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	The D-Serine (D-Serine) ELISA Detection Kit uses a competitive enzyme-linked immunosorbent assay (ELISA) method. D-Serine antibody is pre-coated onto the microplate. Samples, standards, and HRP-labeled competitive antigen are added sequentially to the coated wells, incubated, and washed thoroughly. TMB substrate is used for color development. TMB is converted to blue by peroxidase and then to the final yellow color under the action of acid. The intensity of the color is inversely proportional to the concentration of D-Serine in the sample. The absorbance (OD value) is measured at 450 nm using a microplate reader, and the sample concentration is calculated.
Description	This D-Serine Assay Kit (ELISA) provides a competitive enzyme-linked immunosorbent assay (ELISA) method for the quantitative detection of D-Serine in various biological samples including serum, plasma, cell culture supernatant, and tissue homogenate. The kit uses a pre-coated microplate with D-Serine antibody. The competitive assay format utilizes HRP-labeled competitive antigen, with TMB as the chromogenic substrate. The assay has a sensitivity of 0.1 PPb and a minimum detectable concentration of less than 0.01 PPb. The kit is available in both 96-well and 48-well configurations and includes all necessary reagents for performing the assay.
Form	Liquid
Applications	Quantitative detection of D-Serine in serum samples; Quantitative detection of D-Serine in plasma samples (EDTA, citrate, or heparin anticoagulated); Quantitative

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	detection of D-Serine in cell culture supernatants; Quantitative detection of D-Serine in tissue homogenates; Research on D-Serine-related physiological and pathological processes
Notes	This kit is for research use only and not for use in diagnostic or clinical procedures. Store the kit at 2-8°C. Allow to equilibrate at room temperature for 20 minutes before use. Crystals may form in the concentrated wash buffer after removal from the refrigerator; this is normal. Heat in a water bath to completely dissolve the crystals before use. Unused plate strips should be immediately returned to the self-sealing bag, sealed (low temperature and dry), and stored. According to the instructions, the sample has already been diluted 5-fold during operation; the final result should be multiplied by 5 to obtain the actual sample concentration. Strictly follow the time, volume, and sequence of incubation operations indicated in the instructions. All liquid components should be thoroughly shaken before use. If samples are not tested immediately after collection, aliquot into single-use volumes and freeze at -20°C. Avoid repeated freeze-thaw cycles. Thaw at room temperature and ensure samples are uniformly and completely thawed before testing. For research use only, not for diagnostic use.
Storage	Store at 2-8°C, protected from light and moisture. Unopened kits are stable at 2-8°C until the expiry date. Stable for 6 months.
Shipping	Shipped with ice packs
Reaction conditions	Coating: Pre-coated with D-Serine antibody Incubation temperature: 37°C Incubation time: 60 min (after adding HRP-labeled competitive antigen) Substrate incubation: 37°C, 15 min, protected from light Stop solution addition: 50 µL per well Measurement wavelength: 450 nm Reading time: Within 15 min after adding stop solution Room temperature equilibration: 20 minutes

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Unit definition	Sensitivity: 0.1 PPb Minimum detectable concentration: less than 0.01 PPb Standard curve concentrations: 0, 0.5, 1, 2, 4, 8 PPb
Usage	Kit Components (96-well configuration): Microplate (pre-coated with D-Serine antibody): 12 wells × 8 strips Standards: 0.3 mL × 6 tubes (Concentrations S0-S5: 0, 0.5, 1, 2, 4, 8 PPb) Sample Diluent: 6 mL Competitive Antigen-HRP: 6 mL 20× Wash Buffer: 25 mL Substrate A: 6 mL Substrate B: 6 mL Stop Solution: 6 mL Plate Sealers: 2 pieces Instructions: 1 copy Self-sealing Bags: 1 piece Kit Components (48-well configuration): Microplate (pre-coated with D-Serine antibody): 12 wells × 4 strips Standards: 0.3 mL × 6 tubes (Concentrations S0-S5: 0, 0.5, 1, 2, 4, 8 PPb) Sample Diluent: 3 mL Competitive Antigen-HRP: 3 mL 20× Wash Buffer: 15 mL Substrate A: 3 mL Substrate B: 3 mL Stop Solution: 3 mL Plate Sealers: 2 pieces Instructions: 1 copy Self-sealing Bags: 1 piece Materials Required but Not Supplied: 1. Microplate reader (450 nm) 2. High-precision pipettes and tips: 0.5-10 µL, 2-20 µL, 20-200 µL, 200-1000 µL 3. 37°C incubator Sample Collection and Processing: 1. Serum: Use tubes without pyrogen and endotoxin. Avoid any cell stimulation during operation. After blood collection, centrifuge at 3000 rpm for 10 minutes to separate serum from red blood cells carefully and promptly. 2. Plasma: Use EDTA, citrate, or heparin as anticoagulant. Centrifuge at 3000 rpm for 30 minutes and collect the supernatant. 3. Cell Culture Supernatant: Centrifuge at 3000 rpm for 10 minutes to remove particles and polymers. 4. Tissue Homogenate: Add an appropriate amount of physiological saline to the tissue and homogenize. Centrifuge at 3000 rpm for 10 minutes and collect the supernatant. Storage: If samples are not tested immediately after collection, aliquot into single-use volumes and freeze at -20°C. Avoid repeated freeze-thaw cycles. Thaw at room temperature and ensure samples are uniformly and completely thawed before testing. Preparation: Dilution of 20× Wash Buffer: Dilute with distilled water at a ratio of 1:20, i.e., 1 part of 20× Wash Buffer plus 19 parts of distilled water. Plate Washing Method: 1. Manual washing: Discard the liquid from the wells, fill each well with wash buffer, let stand for 1 minute, discard the liquid, and blot dry on absorbent paper. Repeat this washing process 5 times. 2. Automatic plate washer: Inject 350

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µL of wash buffer per well, soak for 1 minute, and wash 5 times. Assay Protocol: 1. R emove the required plate strips from the aluminum foil bag after equilibrating at room t emperature for 20 minutes. Return the remaining strips to the self-sealing bag and sto re at 4°C. 2. Set up standard wells and sample wells. Add 50 µL of different concentra tions of standards to the standard wells. 3. For sample wells, first add 10 µL of the sa mple to be tested, then add 40 µL of Sample Diluent. Do not add anything to the blan k wells. 4. Except for the blank wells, add 50 µL of HRP-labeled competitive antigen t o each standard well and sample well. Seal the reaction wells with a plate sealer and i ncubate at 37°C in a water bath or incubator for 60 minutes. 5. Discard the liquid, blot dry on absorbent paper, fill each well with wash buffer, let stand for 1 minute, discard the wash buffer, and blot dry on absorbent paper. Repeat this washing process 5 time s (or use a plate washer). 6. Add 50 µL each of Substrate A and Substrate B to each well. Incubate at 37°C protected from light for 15 minutes. 7. Add 50 µL of Stop Soluti on to each well. Within 15 minutes, measure the OD value of each well at 450 nm wa velength. Assay Time: Room temperature equilibration: 20 minutes Incubation: 60 mi nutes at 37°C Washing: 5 times (manual or automatic) Substrate incubation: 15 minut es at 37°C, protected from light Stop and read: Within 15 minutes at 450 nm Data An alysis: 1. Read the OD values of all wells at 450 nm within 15 minutes using a micropl ate reader. 2. Plot the standard curve with concentration on the X-axis and average O D450 values on the Y-axis. A four-parameter logistic (4PL) equation can be used to dr aw the standard curve. Alternatively, the plotting software provided with the microplat e reader (e.g., SkanIt RE software for Thermo FC model microplate readers) can be u sed to draw the standard curve. 3. Substitute the OD450 value of the sample into the standard curve to calculate the concentration of the sample. If the sample has been di luted, multiply by the corresponding dilution factor. 4. Sensitivity: 0.1 PPb Quality Con trol Test: 1. Accuracy: The correlation coefficient R value of standard linear regressio n versus expected concentration is greater than or equal to 0.9900. 2. Sensitivity: The minimum detectable concentration is less than 0.01 PPb. 3. Specificity: No cross-reac tivity with other soluble structural analogues. 4. Repeatability: Both intra-plate and inte

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	r-plate coefficients of variation are less than 15%.

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