DL-Serine Assay Kit (ELISA)

Cat. No. KITG-068 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	This kit is for research use only. This kit is used to determine the content of DL-Serine in samples. This kit applies the enzyme-linked immunosorbent competitive assay to determine the level of DL-Serine in specimens. The purified DL-Serine antibody is coated on the microplate to form a solid-phase antibody. DL-Serine and HRP-labeled DL-Serine antigen are added to the antibody-coated wells, and they compete for binding. After thorough washing, the substrate TMB is added for color development. The color intensity of the sample is negatively correlated with the content of DL-Serine in the sample. The absorbance (OD value) is measured at 450 nm using a microplate reader, and the content of DL-Serine in the sample is calculated through the standard curve.
Description	This DL-Serine Assay Kit (ELISA) provides a competitive enzyme-linked immunosorbent assay (ELISA) method for the quantitative determination of DL-Serine content in various samples including water samples and tissue samples. The kit uses a microplate coated with purified DL-Serine antibody to form a solid-phase antibody. The competitive assay format utilizes HRP-labeled DL-Serine antigen, with TMB as the chromogenic substrate. The assay has a sensitivity range of 0.1 μmol/L – 5 μmol/L. The kit is available in a 96 tests/box configuration and includes all necessary reagents for performing the assay.
Form	Liquid
Applications	Quantitative determination of DL-Serine content in water samples; Quantitative determination of DL-Serine content in tissue samples; Research on DL-Serine-related

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	physiological and pathological processes
Notes	This kit is for research use only and not for use in diagnostic or clinical procedures. The kit should be equilibrated at room temperature for 15-30 minutes after being taken out of a refrigerated environment. If the enzyme-coated plate is not used up after opening, the strips should be stored in a sealed bag. The concentrated wash buffer may have crystals precipitated out; during dilution, it can be warmed in a water bath to help dissolve, and this does not affect the results during washing. Each step of sample addition should be performed with a pipette, and its accuracy should be checked frequently to avoid experimental errors. The time for one addition of samples is best controlled within 5 minutes; if the number of specimens is large, it is recommended to use a multichannel pipette. Please perform a standard curve simultaneously with each assay, and it is best to do duplicate wells. If the content of the substance to be measured in the specimen is too high (the OD value of the sample is greater than that of the first well of the standard), please dilute it with the sample diluent by a certain multiple (n-fold) before measuring; when calculating, please multiply by the total dilution factor (×n×5). The sealing film is for single use only to avoid cross-contamination. The substrate should be stored protected from light. The microplate reader reading shall prevail. All samples, wash buffer, and various wastes should be treated as infectious materials. Components of different batch numbers of this reagent must not be mixed. Samples containing NaN_3 cannot be detected, as NaN_3 inhibits the activity of horseradish peroxidase (HRP). For research use only.
Storage	Store at 2-8°C. Validity period: 6 months.
Shipping	Shipped with ice packs
Reaction conditions	Detection method: ELISA (Enzyme-Linked Immunosorbent Competitive Assay) Coating: Purified DL-Serine antibody coated on microplate Incubation temperature:

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	37°C Incubation time: 60 min (after adding enzyme reagent) Substrate incubation: 37°C, 15 min, protected from light Stop solution addition: 50 µl per well Measurement wavelength: 450 nm Reading time: Within 15 minutes after adding stop solution Assay time: Approximately 90 minutes (60 min incubation + 15 min color development + 15 min measurement window)
Unit definition	Sensitivity: 0.1 µmol/L – 5 µmol/L Standard concentrations: S1 (4 µmol/L), S2 (2 µmol/L), S3 (1 µmol/L), S4 (0.5 µmol/L), S5 (0.25 µmol/L)
Usage	Kit Components (96 tests/box): 30× Concentrated Wash Buffer: 20 ml × 1 bottle Enzyme Reagent: 6 ml × 1 bottle Enzyme-Coated Plate: 12 wells × 8 strips Chromogen A Solution: 6 ml × 1 bottle Chromogen B Solution: 6 ml × 1 bottle Stop Solution: 6 ml × 1 bottle Sample Diluent: 6 ml × 1 bottle Standard S1 (4 µmol/L): 0.5 ml × 1 bottle Standard S2 (2 µmol/L): 0.5 ml × 1 bottle Standard S3 (1 µmol/L): 0.5 ml × 1 bottle Standard S4 (0.5 µmol/L): 0.5 ml × 1 bottle Standard S5 (0.25 µmol/L): 0.5 ml × 1 bottle Instruction Manual: 1 copy Sealing Film: 2 sheets Compatible Sample Types: Water samples, tissue samples Materials Required but Not Supplied: Microplate reader (450 nm) High-precision pipettes and tips 37°C incubator Distilled water Glass fiber filter (for water samples) Butanol, methanol (for tissue sample extraction) Sample Preparation: 1. Water samples should be subjected to three freeze-thaw cycles at -20°C after collection, then filtered through glass fiber and reserved for examination. 2. Tissue samples should be extracted with butanol:methanol:water (5:25:70 V:V:V), or extracted according to relevant literature; after extraction, the experiment should be performed as soon as possible. If the test cannot be performed immediately, the specimen can be stored at -20°C and reserved for examination. 3. Samples containing NaN_3 cannot be detected, as NaN_3 inhibits the activity of horseradish peroxidase (HRP). Preparation: Dilute the 30× concentrated wash buffer with distilled water 30-fold before use. Assay Protocol: 1. Add samples: Set up standard wells, blank wells (the blank control well does

not add samples or enzyme reagent, the rest of the steps are the same), and sample wells to be tested. Add 50 µl to the standard wells on the enzyme-coated plate; in the sample wells to be tested, first add 40 µl of sample diluent, then add 10 µl of the sample to be tested (the final dilution of the sample is 5-fold). Add the sample to the bottom of the microplate well, try not to touch the wall, and gently shake to mix. 2. Add enzyme: Add 50 µl of enzyme reagent to each well, except the blank well. 3. Incubation: Seal the plate with sealing film and incubate at 37°C for 60 minutes. 4. Preparation of wash buffer: Dilute the 30× concentrated wash buffer with distilled water 30-fold before use. 5. Wash: Carefully peel off the sealing film, discard the liquid, shake dry, fill each well with wash buffer, let stand for 30 seconds, then discard, and repeat 5 times, pat dry. 6. Color development: First add 50 µl of chromogen A to each well, then add 50 µl of chromogen B, gently shake to mix, and develop color protected from light at 37°C for 15 minutes. 7. Termination: Add 50 µl of stop solution to each well to terminate the reaction (at this time the blue color immediately turns yellow). 8. Measurement: Zero with the blank well, and measure the absorbance (OD value) of each well in sequence at 450 nm wavelength. The measurement should be performed within 15 minutes after adding the stop solution. Data Analysis: Plot the standard curve with the concentration of the standard substance as the abscissa and the OD value as the ordinate on graph paper; according to the OD value of the sample, find the corresponding concentration from the standard curve, then multiply by the dilution factor; or calculate the regression equation of the standard curve from the concentration and OD value of the standard substance, substitute the OD value of the sample into the equation to calculate the sample concentration, then multiply by the dilution factor, which is the actual concentration of the sample. If the content of the substance to be measured in the specimen is too high (the OD value of the sample is greater than that of the first well of the standard), please dilute it with the sample diluent by a certain multiple (n-fold) before measuring; when calculating, please multiply by the total dilution factor (×n×5).

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