Sugar Beet Beta v 1 ELISA Kit

Cat. No. KITG-001 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	This kit employs a double-antibody sandwich method to measure the level of Beta vulgaris allergen protein (Beta v 1) in specimens. A purified antibody is used to coat microplates to create a solid-phase antibody. Beta vulgaris allergen protein (Beta v 1) is then added to the microplate wells coated with the monoclonal antibody, followed by an HRP-labeled antibody to form an antibody-antigen-enzyme-labeled antibody complex. After thorough washing, the substrate TMB is added for color development. TMB is converted to blue under the catalysis of HRP enzyme and further transformed into the final yellow under the action of acid. The color intensity is positively correlated with the amount of Beta vulgaris allergen protein (Beta v 1) in the sample. The absorbance (OD value) is measured at a wavelength of 450 nm using a microplate reader, and the concentration of Beta vulgaris allergen protein (Beta v 1) in the sample is calculated from a standard curve.
Species	Beta vulgaris
Description	This kit employs a double-antibody sandwich method to measure the level of Beta vul garis allergen protein (Beta v 1) in specimens. A purified antibody is used to coat micr oplates to create a solid-phase antibody. Beta vulgaris allergen protein (Beta v 1) is th en added to the microplate wells coated with the monoclonal antibody, followed by an HRP-labeled antibody to form an antibody-antigen-enzyme-labeled antibody complex. After thorough washing, the substrate TMB is added for color development. TMB is co nverted to blue under the catalysis of HRP enzyme and further transformed into the fi nal yellow under the action of acid. The color intensity is positively correlated with the amount of Beta vulgaris allergen protein (Beta v 1) in the sample. The absorbance (O

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	D value) is measured at a wavelength of 450 nm using a microplate reader, and the concentration of Beta vulgaris allergen protein (Beta v 1) in the sample is calculated from a standard curve.
Form	ELISA Kit
Applications	Measurement of Beta vulgaris allergen protein (Beta v 1) level in specimens
Notes	Sample Handling and Requirements: 1. Serum: Collect whole blood using a serum collection tube, allow it to stand at room temperature for blood cell aggregation, and then collect the serum. Alternatively, centrifuge at 1000×g for 15 minutes to obtain serum. Handle gently to avoid hemolysis. Test the serum promptly or aliquot and store at -20°C or below for no more than 6 months. Freeze-thaw cycles should not exceed 2 times. 2. Plasma: Collect plasma using EDTA or heparin collection tubes. Centrifuge whole blood at 1000×g for 15 minutes to obtain plasma. Handle gently to avoid hemolysis. Test the plasma promptly or aliquot and store at -20°C or below for no more than 6 months. Freeze-thaw cycles should not exceed 2 times. 3. Urine: Collect in a sterile tube and centrifuge for about 20 minutes (2000-3000 rpm). Carefully collect the supernatant. If precipitate forms during storage, centrifuge again. Follow the same procedure for pleural fluid and cerebrospinal fluid. 4. Cell Culture Supernatant: For detecting secreted components, collect in a sterile tube and centrifuge for about 20 minutes (2000-3000 rpm). Carefully collect the supernatant. For detecting intracellular components, dilute the cell suspension with PBS (pH 7.2-7.4) to a cell concentration of approximately 1 million/ml. Disrupt cells by repeated freeze-thaw cycles or sonication, centrifuge for about 20 minutes (2000-3000 rpm), and carefully collect the supernatant. If precipitate forms during storage, centrifuge again. 5. Tissue Specimens: Rinse the tissue with pre-cooled PBS (0.01M, pH=7.4) to remove residual blood (hemolyzed red blood cells in the homogenate can affect detection results). Weigh and mince the tissue. Mix the minced tissue with an appropriate volume of PBS (generally at a 1:9 weight-volume ratio, e.g., 1g of tissue sample to 9mL of PBS; adjust the volume as needed and r

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ecord). It is recommended to add protease inhibitors to the PBS. Add the mixture to a glass homogenizer and homogenize thoroughly on ice or with a homogenizer. For further cell lysis, sonicate the homogenate or perform repeated freeze-thaw cycles. Finally, centrifuge the homogenate at 5000×g for 5-10 minutes and collect the supernatant for testing. Note: Extract specimens as soon as possible after collection and proceed with the experiment promptly. If the experiment cannot be performed immediately, store specimens at -20°C but avoid repeated freeze-thaw cycles. Do not test samples containing NaN_3 as it inhibits HRP activity. Avoid using hemolyzed or hyperlipidemic serum/plasma samples as they may affect detection results. If the target concentration in the sample exceeds the highest standard value, dilute the sample appropriately before testing. It is recommended to perform a preliminary experiment to determine the dilution factor. Kit Components: 48-well Configuration: Instruction Manual: 1 Plate Sealer: 2 Pre-coated Assay Plate: 1×48, Storage 2-8°C Standard (24 ng/mL): 0.5 ml×1 tube, Storage 2-8°C HRP-Antibody: 3 ml×1 bottle, Storage 2-8°C Standard Diluent: 1.5 ml×1 bottle, Storage 2-8°C Sample Diluent: 3 ml×1 bottle, Storage 2-8°C Wash Buffer (20x): 20 ml×1 bottle, Storage 2-8°C TMB Substrate A: 3 ml×1 bottle, Storage 2-8°C TMB Substrate B: 3 ml×1 bottle, Storage 2-8°C Stop Solution: 3 ml×1 bottle, Storage 2-8°C 96-well Configuration: Instruction Manual: 1 Plate Sealer: 2 Pre-coated Assay Plate: 1×96, Storage 2-8°C Standard (24 ng/mL): 0.5 ml×1 tube, Storage 2-8°C HRP-Antibody: 6 ml×1 bottle, Storage 2-8°C Standard Diluent: 1.5 ml×1 bottle, Storage 2-8°C Sample Diluent: 6 ml×1 bottle, Storage 2-8°C Wash Buffer (20x): 30 ml×1 bottle, Storage 2-8°C TMB Substrate A: 6 ml×1 bottle, Storage 2-8°C TMB Substrate B: 6 ml×1 bottle, Storage 2-8°C Stop Solution: 6 ml×1 bottle, Storage 2-8°C Materials Required but Not Supplied: Microplate reader (primary wavelength: 450 nm, reference wavelength: 630 nm) High-precision pipettes and disposable tips: 0.5-10, 2-20, 20-200, 200-1000 µl Microplate washer or wash bottle 37°C incubator Dilution tubes (polypropylene) Double-distilled water, deionized water, measuring cylinders, etc. Reagent Preparation and Storage: 1. Store all kit components at 2-8°C. 2. Ensure the kit is stored under specified conditions before use. Prepare only the required amount of reagents for each

experiment. 3. Centrifuge the standard vial for 30 seconds before opening to ensure a ll standard is concentrated at the bottom. 4. Preparation of washing solution: If crystal s are present in the concentrated washing solution, heat at 37°C until all crystals diss olve. Dilute 1:19 or 1:29 with distilled water (e.g., add 190 mL of distilled water to 10 mL of concentrated washing solution and mix well). The prepared washing solution ca n be stored at 2-8°C for 1 week. 5. Preparation of 5 Standard Concentrations: Prepar e 5 tubes. First, dilute the standard 1:1 with "standard diluent" to prepare the upper li mit calibration standard S1 (e.g., mix 150 µl of standard with 150 µl of standard diluen t to obtain 300 µl of S1 calibration standard). Then, add 150 µl of standard diluent to e ach of 4 centrifuge tubes and sequentially dilute S1 calibration standard 4 times in a 2-fold dilution series to prepare 5 calibration standards: S1, S2, S3, S4, S5. Operation al Steps: 1. Sample Addition: Set up blank wells (no sample or enzyme-labeled reage nt added; all other steps are the same), standard wells, and sample wells. Accurately add 50 µl of standard to the standard wells. Add 40 µl of sample diluent to the sample wells, followed by 10 µl of the sample (final dilution: 5 times). Add the sample to the b ottom of the microplate well without touching the well walls and gently mix. 2. Incubati on: Seal the plate with a plate sealer and incubate at 37°C for 30 minutes. 3. Washin g: Carefully remove the plate sealer, discard the liquid, and dry by flicking. Fill each w ell with washing solution, let stand for 30 seconds, then discard. Repeat 5 times and p at dry. 4. Enzyme Addition: Add 50 µl of enzyme-labeled reagent to each well except t he blank well. 5. Incubation: Seal the plate and incubate at 37°C for 30 minutes. 6. W ashing: Repeat the washing step as described in step 3. 7. Color Development: Add 5 0 µl of substrate A to each well, followed by 50 µl of substrate B. Gently mix and incu bate at 37°C protected from light for 10 minutes. 8. Termination: Add 50 µl of stop sol ution to each well to terminate the reaction (the color changes from blue to yellow im mediately). 9. Measurement: Set the blank well to zero and measure the absorbance (OD value) of each well sequentially at 450 nm. Measurement should be completed w ithin 15 minutes after adding the stop solution. Note: Incubation time can be adjusted based on color development intensity. It is recommended to observe color developme

nt intensity midway through incubation. Precautions: 1. All kit components are for rese arch purposes only! 2. The stop solution contains dilute sulfuric acid and is corrosive; handle with care. 3. Kit components contain preservatives, protein components, etc., which may cause skin allergic reactions; wear a mask to avoid inhaling mist. 4. The c olor developer and concentrated washing solution may cause skin, eye, and respirato ry tract irritation; wear a mask to avoid inhaling mist. 5. Wear protective gloves, clothin g, and eye and face protection. Wash hands thoroughly after the experiment. 6. Plate sealers are for one-time use only to avoid cross-contamination. 7. Store the substrate protected from light. 8. Do not mix kits from different batches. It is not recommended t o assemble microplate strips from different plates on one plate for detection, even if th ey are from the same batch, as there may be plate-to-plate variations. 9. Always prep are a standard curve in parallel for each experiment. Do not use the standard curve fr om a previous experiment for calculating results of the next experiment. 10. Do not us e expired kits for detection. 11. The substrate color developer should be colorless; if it turns blue, it has deteriorated and should not be used in the experiment. 12. Seal micr oplate strips with an appropriate plate sealer for more reliable results. 13. Avoid gener ating bubbles during operation. 14. Do not cross-use lids from different reagent bottle s. 15. Follow the instructions in the manual for the experiment. Failure to do so may r esult in changes in experimental results. Any experimental operations not following th e manual should be consulted with after-sales technical support in advance. Otherwis e, we do not guarantee the reliability of the experimental results. 16. All samples, was hing solutions, and various wastes should be treated as infectious materials. Data Cal culation: Dual-wavelength detection results do not require adjustment; proceed directl y with standard curve fitting and result calculation. For single-wavelength detection re sults, it is recommended to adjust to zero using the OD value of the 0-concentration c alibration standard before standard curve fitting and result calculation. It is recommen ded to use the following methods for standard curve fitting: Four-parameter logistic (4-P) curve fitting: Recommend using concentration as the x-axis (discard the 0-concentr ation point) and absorbance as the y-axis. Point-to-point fitting: Perform linear fitting s eparately between each pair of adjacent points and calculate segmentally. Other stan

	dard curve fitting methods: Polynomial and double-logarithmic methods can also be u sed. Professional software such as ELISACALC, SPSS, or Graphpad Prism can also be used for result fitting and calculation.
Storage	Store all kit components at 2-8°C. Ensure the kit is stored under specified conditions before use. Prepare only the required amount of reagents for each experiment. The prepared washing solution can be stored at 2-8°C for 1 week.
Usage	For research purposes only!

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