



User's Manual

Human IL-13 ELISA Development Kit



DEIA129



10 plates



This product is for research use only and is not intended for diagnostic use.

For illustrative purposes only. To perform the assay the instructions for use provided with the kit have to be used.

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PRODUCT INFORMATION

Intended Use

Human IL-13 ELISA Development Kit contains the key components required for the quantitative measurement of natural and/or recombinant IL-13 in a sandwich ELISA format. Using the ELISA protocol described below, this kit provides sufficient reagents to assay IL-13 in approximately 1500 ELISA plate wells.

General Description

Interleukin 13 (IL-13) is a cytokine secreted by many cell types, but especially T helper type 2 (Th2) cells¹, that is an important mediator of allergic inflammation and disease. IL-13 induces its effects through a multi-subunit receptor that includes the alpha chain of the IL-4 receptor (IL-4R α), which is also a component of the IL-4 receptor, and at least one of two known IL-13-specific binding chains.¹ The functions of IL-13 overlap considerably with those of IL-4. Although IL-13 is associated primarily with the induction of airway disease, it also has anti-inflammatory properties. IL-13 induces many features of allergic lung disease, including airway hyperresponsiveness, goblet cell metaplasia and mucus hypersecretion, which all contribute to airway obstruction.

Reagents And Materials Provided

1. Capture Antibody
2. Detection Antibody
3. Standard
4. StreptAvidin-HRP
5. TMB Liquid Substrate "Ready to Use"

Materials Required But Not Supplied

Additional Required Materials

ELISA microplates

BSA

Dulbecco's PBS (DPBS) [10 $\times$]

Stop Solution: 450 nm Stop Reagent for TMB Microwell

Required Solutions

PBS: dilute 10 $\times$ PBS to 1 $\times$ PBS, pH 7.2, in sterile water

Wash Buffer: 0.05% Tween-20 in PBS

Reagent Diluent: 1.0% BSA in PBS*

Blocking Buffer 1.0% BSA in PBS

Note: Other acceptable blocking buffers such as CD's Ultra-FISH Block or Ultra-Synthetic Block may be used

for assay optimization.

Storage

See "Reagent Preparation"

Plate Preparation

1. Dilute the capture antibody to the working concentration in PBS without carrier protein and immediately add 100 µL to each ELISA plate well. Seal the plate and incubate overnight at room temperature.
2. Aspirate the wells to remove liquid and wash the plate 4 times using 300-400 µL of wash buffer per well.
Note: We recommend using an autowasher, although a squirt bottle or manifold dispenser would suffice.
3. After the last wash, invert plate to remove residual buffer and blot on paper towel.
4. Add 300 µL block buffer to each well and incubate for at least 1 hour at room temperature.
5. Aspirate and wash plate 4 times.

Note: Complete removal of liquid at each step is essential for good performance and sensitivity of assay.

Reagent Preparation

Human IL-13 Capture Antibody: Centrifuge vial prior to opening. When reconstituted in 0.5 mL sterile PBS, capture antibody will be at a concentration of 240 µg/mL. Dilute in PBS without carrier protein to the working concentration of 2.0 µg/mL in PBS. Following reconstitution the capture antibody may be stored at 2-8°C for up to 6 months. For long term storage, it is recommended to aliquot into working volumes and store at -70°C in a manual defrost freezer. Avoid repeated freeze and thaw cycles.

Biotinylated Goat Anti-Human IL-13 Detection Antibody: Centrifuge vial prior to opening. When reconstituted in 1.0 mL of Reagent Diluent, detection antibody will be at a concentration of 9.0 µg/mL. Dilute in Reagent Diluent to a working concentration of 150 ng/mL. Detection antibodies may be stored at 2-8°C for up to 6 months. For long term storage, it is recommended to aliquot into working volumes and store at -70°C in a manual defrost the freezer. Avoid repeated freeze and thaw cycles.

E. coli - expressed Recombinant Human IL-13 Standard: Centrifuge vial prior to opening. Reconstitute each vial with 0.5 mL of Reagent Diluent to a concentration of 170 ng/mL. Refer to the lot-specific datasheet for amount supplied. The rProtein may be stored at 2-8°C for one (1) month or aliquoted and stored at -70°C for up to three months in a manual defrost freezer. Avoid repeated freeze and thaw cycles.

TMB Liquid Substrate "Ready to Use" (TMB Substrate should be at ambient temperature prior to use): 60.0 mL of TMB HRP Microwell Substrate Standard Kinetic One Component "Ready Use" is provided. The high quality of the substrate can be preserved by storing at temperatures between 2-8°C. When properly stored, TMB Microwell Substrate is stable for a minimum of 48 months from the manufactured date.

Assay Procedure

Standard/Sample: Add 100 µL of the working dilution with reagent dilution standard or sample to each well (duplicate recommended). Cover plate with an adhesive plate cover and incubate at room temperature for at least 2 hours.

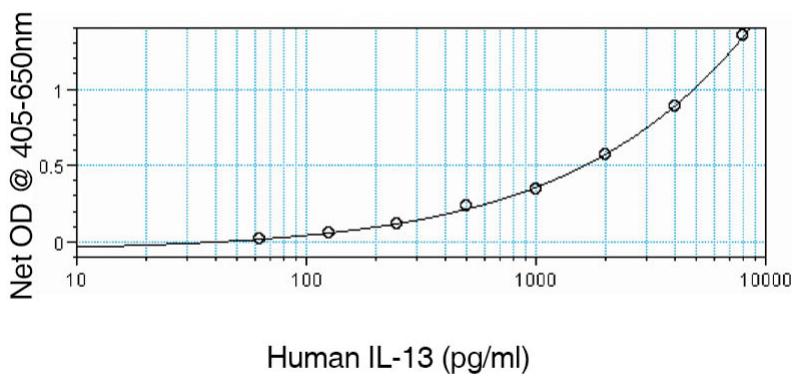
Detection: Aspirate and wash plate 4 times. Add 100 μ L of the detection antibody, diluted in Reagent Diluent to each well. Cover with a new adhesive plate cover and incubate at room temperature for 2 hours.

StreptAvidin-HRP Conjugate: Aspirate and wash plate 4 times. Add 100 μ L of the working dilution (the dilution factor may require optimization) to each well. Cover and incubate at room temperature for 20-30 minutes. Exposure to direct light should be avoided.

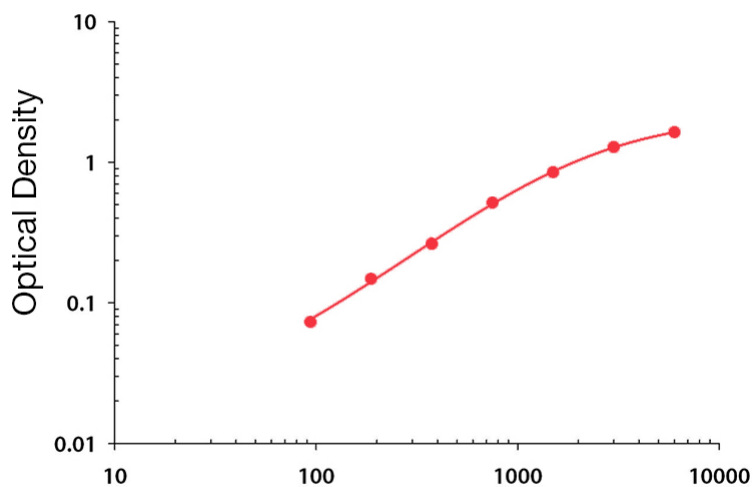
TMB Liquid Substrate: Aspirate and wash plate 4 times. Add 100 μ L of TMB HRP Microwell Substrate Standard Kinetic One Component "Ready "Ready Use" to each well. Incubate at room temperature for 20-30 minutes and monitor color development. Exposure to direct light should be avoided.

Stop Solution: Add 50-100 μ L of Stop Solution to each well. Monitor color development with an ELISA plate reader at 450 nm with wavelength correction set at 540 nm or 570 nm.

Typical Standard Curve



Human IL-13 Concentration (pg/mL)



I-887

Precautions

Some of the required components may contain acid and/or cause allergic reactions. Breathing in product mist or fumes should be avoided. Wear protective gloves, clothing, eye, and face protection. Wash hands thoroughly after handling. Please refer to the MSDS on our website prior to use.

References

1. Wynn, TA. et al. (2003) Annu Rev Immunol. 21: 425
2. Citrin, DE. et al. (2016) Sci Rep. 6:39714.