

# BioSim™ Ipilimumab (Yervoy®)(Human) ELISA Kit

rev 11/17

(Catalog # E4384-100, 100 assays, Store at 4°C)

## I. Introduction:

Ipilimumab (Yervoy®) is a fully human IgG1κ antibody that binds to CTLA-4 (cytotoxic T lymphocyte associated antigen 4), a molecule on T-cells that is indicated for unresectable or metastatic melanoma. The absence or presence of CTLA-4 can augment or suppress the immune system's T-cell response in fighting disease. Ipilimumab is designed to block the activity of CTLA-4, thereby sustaining an active immune response in its attack on cancer cells. The proposed mechanism of action is indirect, and may be through T-cell - mediated anti-tumor immune responses. BioSim™ Ipilimumab ELISA kit has been developed for specific quantification of Ipilimumab concentration in human serum or plasma with high sensitivity and reproducibility.

## II. Application:

This ELISA kit is used for *in vitro* quantitative determination of Ipilimumab

Detection Range: 10 - 1000 ng/ml

Sensitivity: 10 ng/ml

Assay Precision: Intra-Assay: CV < 15%; Inter-Assay: CV < 15% (CV (%) = SD/mean X 100)

Recovery rate: 85 – 115% with normal human serum samples with known concentrations

Cross Reactivity: There is no cross reaction with native serum immunoglobulins and tested monoclonal antibodies such as infliximab (Remicade®), adalimumab (Humira®), etanercept (Enbrel®), bevacizumab (Avastin®) and trastuzumab (Herceptin®)

## III. Sample Type:

Human serum and plasma

## IV. Kit Contents:

Components	E4384-100	Part No.
Micro ELISA Plate	1 plate	E4384-100-1
Ipilimumab Standards (S1 – S7)	0.3 ml X 7	E4384-100-2.x
Assay Buffer	50 ml	E4384-100-3
HRP-conjugate Probe	12 ml	E4384-100-4
TMB substrate (Avoid light)	12 ml	E4384-100-5
Stop Solution	12 ml	E4384-100-6
Wash buffer (20X)	50 ml	E4384-100-7
Plate sealers	2	E4384-100-8

## V. User Supplied Reagents and Equipment:

- Microplate reader capable of measuring absorbance at 450 nm
- Calibrated measures
- Precision pipettes with disposable tips
- Clean eppendorf tubes for preparing standards or sample dilutions
- Absorbent paper

## VI. Storage and Handling:

The entire kit may be stored at 4°C for up to 12 months from the date of shipment.

## VII. Reagent and Sample Preparation:

Note: Prepare reagents within 30 minutes before the experiment.

Before using the kit, spin tubes and bring down all components to the bottom of tubes.

1. **Wash Buffer:** Dilute the 20X Wash Buffer to 1X solution in ddH<sub>2</sub>O (10 ml of Wash Buffer stock to 190 ml of ddH<sub>2</sub>O). Mix the 1X solution thoroughly by vortex manually. The working stock can be stable for 2 weeks after preparation at 4°C.

2. **Standard Preparation:**

Ready to use.

Name	S1	S2	S3	S4	S5	S6	S7
Conc. (ng/ml)	3000	1000	300	100	0	High Control	Low Control

3. **Sample Dilution:**

- **Serum/Plasma:** Dilute samples 1:50 (10 µl Sample + 490 µl Assay Buffer).
- Diluted samples should further be diluted if the concentration of Ipilimumab is higher than the measuring range.
- The usual precautions for venipuncture should be observed. Samples are stable at 4°C for 2 days and -20°C for 6 months. Avoid freeze-and-thaw cycle.

## VIII. Assay Protocol:

Note: Bring all reagents, microplate and samples to room temperature 15 minutes prior to the assay.

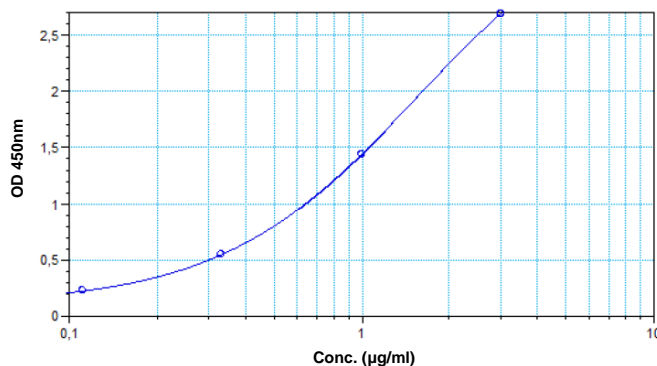
**FOR RESEARCH USE ONLY! Not to be used on humans.**

It is recommended that all standards and samples be run at least in duplicate.  
 A standard curve must be run with each assay.

1. Prepare all reagents, samples and standards as instructed in section VII.
2. Pipette 100  $\mu$ l of **Assay Buffer** non-exceptionally into each of the wells to be used
3. Add 10  $\mu$ l of **standards, controls** and **diluted-samples** into appropriate wells. Cover wells and incubate for 30 minutes at room temperature (RT).
4. Discard incubation solution. Wash plate 3 times each with 300  $\mu$ l of diluted **Wash Buffer**. Remove excess solution by tapping the inverted plate on a paper towel.
5. Add 100  $\mu$ l of **HRP-conjugate** into each well. Cover wells with adhesive plate sealer and incubate at RT for 30 minutes.
6. Discard the solution and wash the wells as step 4.
7. Add 100  $\mu$ l of 1X **TMB substrate** solution and incubate the plate in dark at RT for 10 minutes
8. Add 100  $\mu$ l of **Stop solution** to stop the reaction
9. Read the absorbance in micro plate reader set to 450 nm within 20 minutes. (reference wavelength to 650 nm)

#### IX. CALCULATION:

Using the standards disregarding zero standard, construct a standard curve by plotting the OD<sub>450/650 nm</sub> for each of 4 standards on the Y-axis versus the corresponding Ipilimumab concentration on the X-axis. Construct a standard curve of difference data using software capable of generating four parameter logistic (4PL) or point-to-point calculation curve fit. To obtain the exact values of the samples, the concentration determined from the standard-curve should be multiplied by the dilution factor.



**Figure:** Typical Standard Curve:  
 These standard curves are for demonstration only. A standard curve must be run with each assay.

#### X. RELATED PRODUCTS:

- BioSim™ Rituximab (Mabthera®) (Human) ELISA Kit (Cat. No. E4371-100)
- BioSim™ Adalimumab (Humira®) (Human) ELISA Kit (Cat. No. E4372-100)
- BioSim™ Bevacizumab (Avastin®) (Human) ELISA Kit (Cat. No. E4373-100)
- BioSim™ Etanercept (Enbrel®) (Human) ELISA Kit (Cat. No. E4374-100)
- BioSim™ Ipilimumab (Remicade®) (Human) ELISA Kit (Cat. No. E4375-100)
- BioSim™ Trastuzumab(Herceptin®)(Human) ELISA Kit (Cat. No. E4376-100)
- BioSim™ Golimumab (Simponi®)(Human) ELISA Kit (Cat. No. E4377-100)
- BioSim™ Infliximab (Remsima®)(Human) ELISA Kit (Cat. No. E4378-100)
- BioSim™ Cetuximab (Erbix®)(Human) ELISA Kit (Cat. No. E4379-100)
- BioSim™ Denosumab (Prolia®)(Human) ELISA Kit (Cat. No. E4380-100)
- BioSim™ Omalizumab (Xolair®)(Human) ELISA Kit (Cat. No. E4381-100)
- BioSim™ Nivolumab (Opdivo®)(Human) ELISA Kit (Cat. No. E4382-100)
- BioSim™ Pembrolizumab (Keytruda®)(Human) ELISA Kit (Cat. No. E4383-100)
- BioSim™ Ipilimumab (Yervoy®)(Human) ELISA Kit (Cat. No. E4384-100)

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