SOLUBLE PROGRAMMED CELL DEATH 1/CD279 (HUMAN) ELISA KIT

FOR THE QUANTITATIVE DETERMINATION OF HUMAN SOLUBLE PD1/sCD279 CONCENTRATIONS IN SERUM AND CELL CULTURE SUPERNATES

PRODUCT INFORMATION:
THIS KIT IS FOR ONE TIME USE ONLY.

ELISA Name	**Soluble PD1/CD279 (Human) ELISA Kit**
Catalog No.	SK00808-01
Lot No.	
Formulation	96 T
Standard range	78 – 5000 pg/ml
Sensitivity	25 pg/ml
Sample Volume	100 µl
Sample Type	Serum and Cell Culture Supernates
Dilution Factor	**Optimal dilutions should be determined by each laboratory for each application**
Specificity	Human Soluble PD1/CD279 only
Calibration	Human soluble PD1/CD279 Recombinant
Intra-assay Precision	6 - 8%
Inter-assay Precision	10 - 12%
Storage	2 – 8°C up to 1 month, see page 2 for more information
This kit contains sufficient materials to run 35 samples duplicated provided that assay is run according to protocol.	

ALWAYS REFER TO LOT SPECIFIC PROTCOL PROVIDED WITH EACH KIT FOR INSTRUCTIONS. PROTOCOL MUST BE READ BEFORE USING THIS PRODUCT.

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

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DESCRIPTION

This Human Soluble Programmed Cell Death 1 (PD1)/CD279 ELISA Kit contains the necessary components required for the quantitative measurement of recombinant and/or natural human soluble PD1/CD279 from cell culture supernates, and serum in a sandwich ELISA format.

This immunoassay contains recombinant human soluble PD1/CD279 and antibodies raised against this protein. Results from this immunoassay have shown to accurately quantify recombinant and natural soluble PD1/CD279 samples.

ASSAY OVERVIEW

This assay employs the quantitative sandwich ELISA format. The plate is pre-coated with an antibody specific for human soluble PD1/CD279. The capture antibody can bind to the human soluble PD1/CD279 in the standard and samples. After washing the plate of any unbound substances, a HRP conjugated antibody against human soluble PD1/CD279 is added to the wells. After the last wash to remove any unbound enzyme, a substrate solution is added to the wells and color develops in direct proportion to the amount of human soluble PD1/CD279 bound in the standard solutions or samples. A standard curve can be established and sample values can be read off the standard curve.

PROCEDURAL LIMITATIONS

_FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
_This ELISA kit should not be used beyond the expiration date on the kit label.
_Do not mix reagents with those from other lots or sources.
_It is important that the Dilution Buffer selected for the standard curve be consistent with the samples being assayed.
_Any modifications in buffers, pipetting technique, washing technique, incubation time or temperature, as well as kit age can cause a change in signal.
_Not all interfering factors have been tested in the immunoassay, therefore the possibility of interference cannot be excluded.

COMPONENTS PROVIDED

DESCRIPTION	CODE	QUANTITY
PD1/CD279 Microplate - 96 well polystyrene microplate (12 strips of 8 wells) coated with an antibody against soluble PD1/CD279.	**808-01-01**	**1 plate**
Soluble PD1/CD279 Standard – 5000 pg/vial of recombinant human soluble PD1/CD279 in a buffered protein base with preservative; lyophilized.	**808-01-02**	**1 vial**
Detection Antibody HRP Conjugate Concentrate – 65 µL/vial, 166-fold concentrate of antibody HRP Conjugate against soluble PD1/CD279 with preservative.	**808-01-03**	**1 vial**
Positive Control – one vial of recombinant human soluble PD1/CD279; lyophilized.	**808-01-04**	**1 vial**
Dilution Buffer – 40 mL of buffered protein based solution with preservative.	**DB10**	**1 bottle**
Wash Buffer - 50 mL of 10-fold concentrated buffered surfactant, with preservative.	**WB01**	**1 bottle**
TMB Substrate Solution - 11 mL of TMB substrate solution.	**TMB01**	**1 bottle**
Stop Solution - 11 mL of 0.5M HCl.	**S-STOP**	**1 bottle**
Plate Sealer	**EAPS**	**1 piece**
Plastic Pouch	**P01**	**1 piece**

STORAGE

Unopened Kit: Store at 2 – 8°C for up to 1 month. For longer storage up to 10 months, unopened Standard, Positive Control, Dilution Buffer should be stored at -20°C. **Detection Antibody-HRP Conjugate Concentrate** and TMB Substrate Solution should be stored only at 2-8°C. Do not use kit past expiration date.

ADDITIONAL MATERIALS REQUIRED

- Microplate reader capable of absorbance measurement at 450 nm.
- Microplate shaker (250 – 300 rpm).
- Microplate washer or manifold dispenser.
- 100 mL and 500 mL graduated cylinders.
- Multi-channel Pipette, Pipettes and pipette tips.
- Deionized or distilled water.

PRECAUTION

This kit should be handled by those persons who have been trained in and can follow the principles of good laboratory practice. Wear protective clothing such as laboratory overalls, safety glasses and gloves. Care should be taken while handling solutions in this kit to avoid contact with skin or eyes, especially with the stop solution because it contains diluted hydrochloric acid. Wash immediately with water in case of contact on skin or eyes.

SAMPLE COLLECTION AND STORAGE

Cell Culture Supernates - Remove particulates by centrifugation and assay immediately or aliquot and store samples at ≤ -20°C. Avoid repeated freeze-thaw cycles.

Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes before centrifugation for 15 minutes at 1000 x g. Remove serum and assay immediately or aliquot and store samples at ≤ -20°C. Avoid repeated freeze-thaw cycles.

Optional: Use Aprotinin (enzyme inhibitor) for ALL sample collection to prevent sample degradation. 0.5 TIU per ml of sample solution.

SAMPLE PREPARATION

Optimal dilutions should be determined by each laboratory for each application.
Use polypropylene test tubes.

REAGENT PREPARATION

Bring all reagents to room temperature before use.

Wash Buffer - If crystals have formed in the concentrate, warm to room temperature and mix gently until the crystals have completely dissolved. Dilute 50 mL of Wash Buffer Concentrate into deionized or distilled water (450 mL) to prepare 500 mL of 1x Wash Buffer.

Soluble PD1/CD279 Standard - Reconstitute the soluble PD1/CD279 Standard with 1.0 mL of Dilution Buffer. This reconstitution produces a stock solution of 5000 pg/mL. Allow the standard to sit for a minimum of 15 minutes with gentle agitation prior to making dilutions. Pipette 250 µL of Dilution Buffer into tubes #1 to #6. Use the stock solution to produce a dilution series (below). Mix each tube thoroughly before the next transfer. The **5000 pg/mL** standard serves as the high standard. The Dilution Buffer serves as the zero standard (0 pg/mL).

TUBE	STANDARD	DILUTION BUFFER	CONCENTRATION
stock	powder	1 mL	5000 pg/mL
# 1	250 µL of stock	250 µL	2500 pg/mL
# 2	250µL of 1	250µL	1250 pg/mL
# 3	250µL of 2	250µL	625 pg/mL
# 4	250µL of 3	250µL	312.5 pg/mL
# 5	250µL of 4	250µL	156.25 pg/mL
# 6	250µL of 5	250µL	78.125 pg/mL

Positive Control - Reconstitute the positive control with 1.0 mL of Dilution Buffer.

Detection Antibody HRP Conjugate - Pipette 10.437 mL of Dilution Buffer into a 15 mL centrifuge tube and transfer 63µL of 166-fold concentrated stock solution to prepare working solution.

ELISA PROTOCOL

Bring all reagents and samples to room temperature before the start of the assay. Blank, standard dilutions, positive control and samples should be assayed in duplicate. ELISA Protocol may need further optimization.

1. Prepare all reagents and working standards as directed in the previous sections.
2. Add 100 µL per well of Dilution Buffer to Blank wells.
3. Add 100 µL of standard dilutions in reverse order of serial dilution, samples, or positive control per well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
4. Aspirate each well and wash, repeating the process three times for a total of four washes. Wash by filling each well with 1x Wash Buffer (300 µL) using a squirt bottle, manifold dispenser, or autowasher. Complete removal of liquid at each step is essential to good performance. After the

last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean paper towels.

5. Add 100 µL of **Detection Antibody HRP Conjugate** working solution to each well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature. **Protect from light.**
6. Repeat the aspiration/wash as in step 4.
7. Add 100 µL of Substrate Solution to each well. Incubate for 20-25 minutes on a microplate shaker at room temperature. **Protect from light.**
8. Add 100 µL of Stop Solution to each well. The color in the wells should change from blue to yellow. If the color in the wells is green, or if the color change does not appear uniform, gently tap the plate to ensure thorough mixing.
9. Determine the optical density of each well within 15 minutes, using a microplate reader set to 450 nm.

CALCULATION OF RESULTS

Create a standard curve by plotting the log of the known concentrations of the standard dilutions (x-axis) versus the log of its corresponding O.D. (y-axis) and draw the best fit line through the points. It is recommended to use computer software capable of generating a log-log curve fit to more accurately quantify the standard dilutions.

If samples have been diluted, the concentration read from the standard curve must be multiplied by the dilution factor.

SPECIFICITY

PROTEINS	CROSS-REACTIVITY (%)
Human Soluble PD1/ CD279	100
Human PDL1	0
Human CTLA-4	0

TYPICAL STANDARD CURVE

The standard curve is provided for demonstration only. A new standard curve should be generated for each set of samples assayed.

SOLUBLE PD1/CD279 (PG/ML)	AVERAGE OD450NM (CORRECTED)*
Blank	0 (0.140)
78.125	0.028
156.25	0.057
312.5	0.107
625	0.245
1250	0.409
2500	0.902
5000	1.746

SUMMARY OF ASSAY PROCEDURE

PREPARE REAGENTS, SAMPLES AND STANDARDS
↓
Add 100 µL of standard dilutions, samples, or positive control to each well. Incubate 2 hours on the plate shaker at RT.
↓
Aspirate and wash 4 times.
↓
Add 100 µL Detection Antibody HRP Conjugate working solution to each well. Incubate 2 hours on the plate shaker at RT.
↓
Aspirate and wash 4 times.
↓
Add 100 µL Substrate Solution to each well. Incubate 20-25 minutes on the plate shaker at RT. **Protect from light**.
↓
Add 100 µL Stop Solution to each well. Read 450nm within 15 min.