

Human PD-1 (Luc) Jurkat Reporter Cell Development Service Data Sheet

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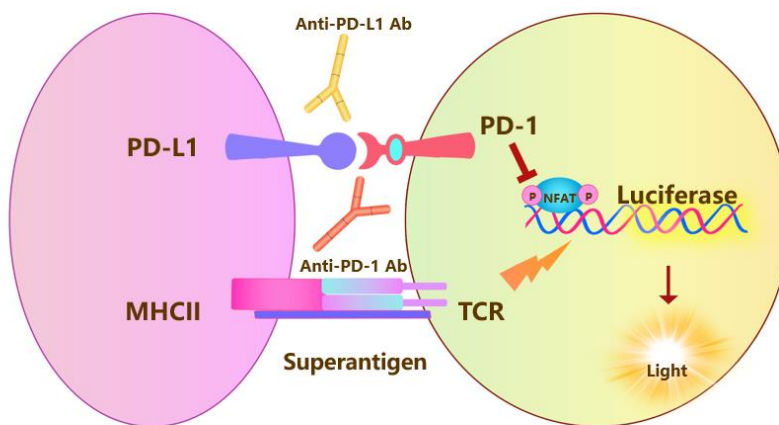
Catalog No.	Size
SCJUR-STF064	2 × (1 vial contains ~5×10 ⁶ cells)

• Description

The Human PD-1 (Luc) Jurkat Reporter Cell was engineered to not only express the NFAT response element driving luciferase expressing systems, but also express the receptor full length human PD-1 (Gene ID: 5133), which can use to evaluate the potency of PD-1 blockade. When cocultured with target cells expressing human PD-L1, the PD-1/PD-L1 interaction inhibits TCR signaling and NFAT-mediated luminescence. Blocking the PD-1/PD-L1 interaction by either anti-PD-1 or anti-PD-L1 antibodies releases the inhibitory signal and results in TCR activation and NFAT-mediated luminescence.

• Application

- Screen for anti-human PD-1 or anti-human PD-L1 antibody.



Human PD-L1 Target Cells

Human PD-1(Luc) Jurkat Reporter Cell

• Cell Line Profile

Cell line	Human PD-1 (Luc) Jurkat Reporter Cell
Host Cell	Jurkat
Property	Suspension
Complete Growth Medium	RPMI-1640 + 10% FBS
Selection Marker	Hygromycin (20 µg/mL) + Puromycin (5 µg/mL)
Incubation	37°C with 5% CO ₂
Doubling Time	16-20 hours
Transduction Technique	Lentivirus

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• *Materials Required for Cell Culture*

- RPMI Medium 1640 (Gibco, Cat.No.11875-093)
- Fetal bovine serum (CellMax, Cat.No.SA211.02)
- Puromycin (InvivoGen, Cat.No.ant-pr-5b)
- Hygromycin B (Invitrogen, Cat.No.10687010)
- Complete Growth Medium: RPMI-1640 + 10% FBS
- Culture Medium: RPMI-1640 + 10% FBS, Hygromycin (20 µg/mL), Puromycin (5 µg/mL)
- Freeze Medium: 90% FBS, 10% (V/V) DMSO
- T-75 Culture flask (Corning, 430641)
- Cryogenic storage vials (SARSTEDT, 72.379.007)
- Thermostat water bath
- Centrifuge
- Luna cell counter (Logos Biosystems, LUNA- II)
- CO₂ Incubator (Thermo, 3111)
- Biological Safety Cabinet (Thermo, 1389)

• *Recovery*

1. Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the cap out of the water. Thawing should be rapid (approximately 5 minutes).
2. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by spraying with 70% ethanol. All the operations from this point on should be carried out under strict aseptic conditions.
3. Transfer the vial contents to a centrifuge tube containing 4.0 mL complete growth medium.
4. Count viable cells and spin at approximately 1000 rpm for 5 minutes.
5. Discard the supernatant and resuspend the cell pellet in an appropriate amount of fresh complete growth medium. Adjust the cell density of the suspension to 1×10^6 viable cells/mL and transfer cells to an appropriate size vessel.
6. Incubate at 37°C with 5% CO₂ incubator

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• *Subculture*

Adjust the cell density at 2×10^5 - 5×10^5 viable cells/mL by the addition of fresh culture medium or replacement of culture medium. Do not allow the cell density to exceed 3×10^6 cells/mL. T-75 flasks are recommended for subculturing.

- **Medium Renewal:** Add fresh culture medium every 3 to 4 days (depending on cell density)

• *Cryopreservation*

1. Count viable cells and harvest the cell suspension.
2. Centrifuge at 1000 rpm for 5 min at RT and resuspend cells in freezing medium to a concentration of 5×10^6 to 1×10^7 cells/mL.
3. Aliquot into cryogenic storage vials. Place vials in a programmable cooler or an insulated box placed in a -80°C freezer overnight, then transferring to liquid nitrogen storage.

• *Storage*

- **Product format:** Frozen
- **Storage conditions:** Liquid nitrogen immediately upon receipt

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• *Receptor Assay*

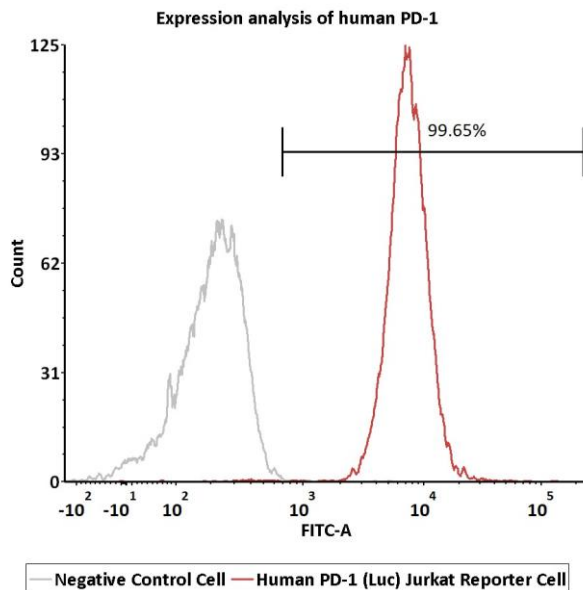


Fig1. Expression analysis of human PD-1 on Human PD-1 (Luc) Jurkat Reporter Cell by FACS. Human PD-1 (Luc) Jurkat Reporter Cell or negative control cell were stained with FITC-labeled anti-human PD1 antibody.

• *Application*

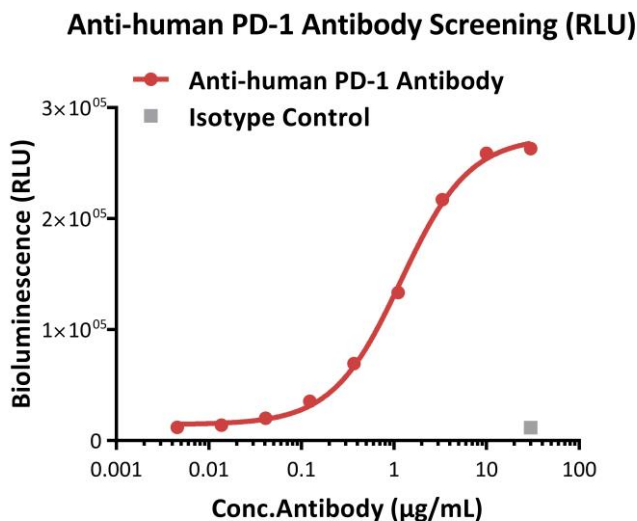


Fig2. Blocking activity of anti-human PD-1 antibody (RLU). This reporter cell was incubated with serial dilutions of antibodies in the presence of target cells expressing human PD-L1. The EC50 of anti-human PD-1 antibody was approximately 1.189 µg/mL.

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Anti-human PD-1 Antibody Screening (FOLD)

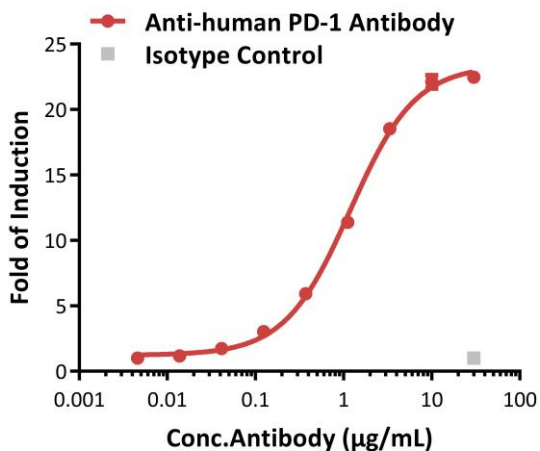
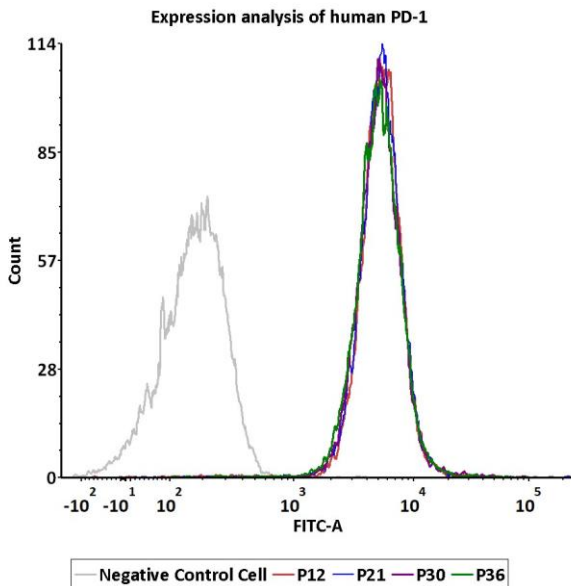


Fig3. Blocking activity of anti-human PD-1 antibody (FOLD). This reporter cell was incubated with serial dilutions of antibodies in the presence of target cells expressing human PD-L1. The max induction fold was approximately 22.47.

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• *Passage Stability*



Passage	MFI for PD-1 (FITC)
P12	5184
P21	5137
P30	4998
P36	4922

Fig4. Passage stability analysis of receptors expression by FACS. Flow cytometry surface staining of human PD-1 on Human PD-1 (Luc) Jurkat Reporter Cell demonstrates consistent mean fluorescent intensity across across passage 12-36.

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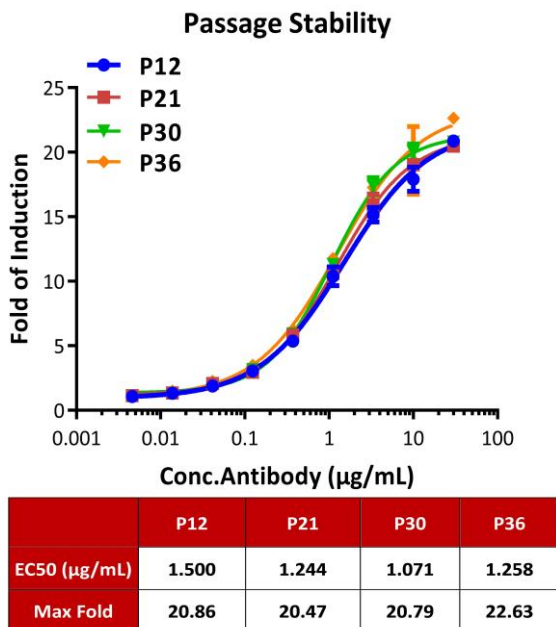


Fig5. Passage stability analysis by anti-human PD-1 antibody stimulation. The continuously growing Human PD-1 (Luc) Jurkat Reporter Cell was stimulated with serial dilutions of antibodies in the presence of target cells expressing human PD-L1. Anti-human PD-1 antibody stimulated response demonstrates passage stabilization (fold induction and EC50) across passage 12-36.

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• Related Products

Products

Human LAG-3 (Luc) Jurkat Reporter Cell

Human TIGIT (Luc) Jurkat Reporter Cell

Cat.No.

SCJUR-STF065

SCJUR-STF066