Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell Data Sheet

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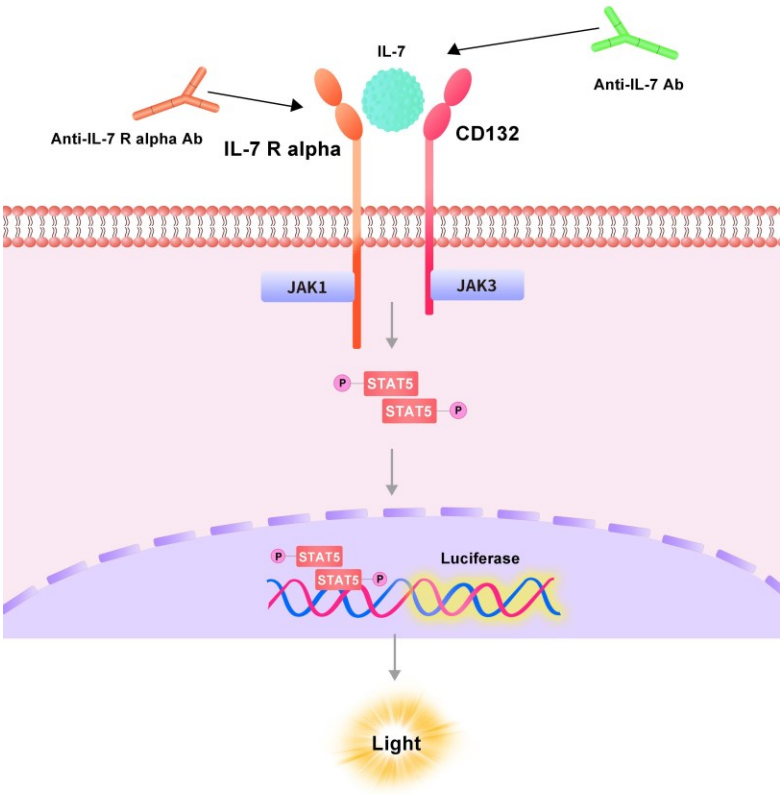
Catalog No.	Size
CHEK-ATF099	2 × (1 vial contains ~5×10^6 cells)

• *Description*

The Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell was engineered to not only express STAT5 signaling response element, but also express the receptors full length human IL-7 R alpha (Gene ID: 3575) and CD132 (Gene ID: 3561). When stimulated with human IL-7 protein, the IL-7 R alpha/CD132 interaction drives STAT5-mediated luminescence. Neutralization of biological effect of human IL-7 protein by corresponding antibody results in a decrease in luminescence.

• *Application*

- Screen for neutralizing antibodies blocking the stimulation of human IL-7 protein.
- Bioactivity detection of human IL-7 fusion protein



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• *Cell Line Profile*

Cell line	Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell
Host Cell	HEK293
Property	Adherent
Complete Growth Medium	DMEM + 10% FBS
Selection Marker	Puromycin (2 μg/mL) + Hygromycin (40 μg/mL) + G418 (200 μg/mL)
Incubation	37°C with 5% CO_2
Doubling Time	22-24 hours
Transduction Technique	Lentivirus

• *Materials Required for Cell Culture*

- DMEM medium (Gibco, Cat.No.11965-092)
- Fetal bovine serum (CellMax, Cat.No.SA211.02)
- Puromycin (InvivoGen, Cat.No.ant-pr-5b)
- Hygromycin B (Invitrogen, Cat.No.10687010)
- G418 (Invivogen, Cat.No.ant-gn-5)
- Complete Growth Medium: DMEM + 10% FBS
- Culture Medium: DMEM + 10% FBS, Puromycin (2 μg/mL), Hygromycin (40 μg/mL), G418 (200 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)
- CO_2 Incubator (Thermo, 3111)
- Biological Safety Cabinet (Thermo, 1389)

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• *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 2 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 and spin at approximately 1000 rpm for 5 minutes.
4. Resuspend cell pellet with 5 mL complete growth medium and transfer the cell suspension into T-75 flask containing 10-15 mL of pre-warmed complete growth medium.
5. Incubate at 37℃ with 5% CO_2 incubator until the cells are ready to be split.

• *Subculture*

1. Remove and discard culture medium.
2. Wash the cells once with sterile PBS.
3. Add 2 mL of 0.25% trypsin to cell culture flask. Place the flask at 37°C for 2-3 minutes, until 90% of the cells have detached.
4. Add 6.0 to 8.0 mL of culture medium and aspirate cells by gently pipetting.
5. Add appropriate aliquots of the cell suspension to new culture vessel.
6. Incubate at 37℃ with 5% CO_2 incubator.

Subcultivation Ratio: A subcultivation ratio of 1:6 to 1:10 is recommended.

Medium Renewal: Every 2 to 3 days.

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• *Cryopreservation*

1. Remove and discard spent medium.
2. Detach cells from the cell culture flasks with 0.25% trypsin.
3. Centrifuge at 1000 rpm for 5 min at RT to pellet cells.
4. Resuspend the cell pellets with complete growth medium and count viable cells.
5. 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.
6. 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***

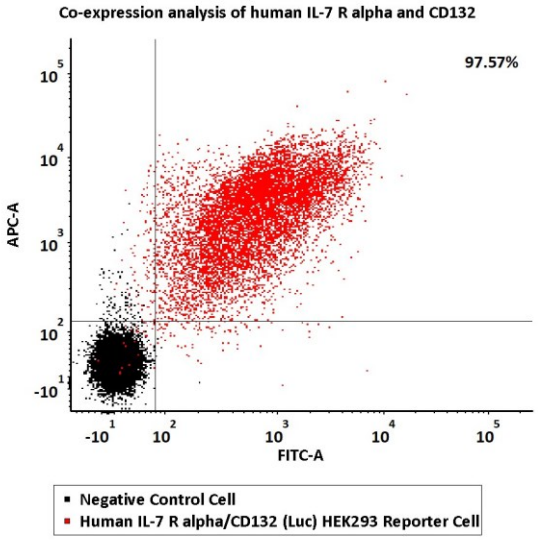

Fig1. Co-expression analysis of human IL-7 R alpha and CD132 on Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell by FACS. Cell surface staining was performed on Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell or negative control cell using FITC-labeled anti- IL-7 R alpha antibody and APC-labeled anti-CD132 antibody.

- ***Application***

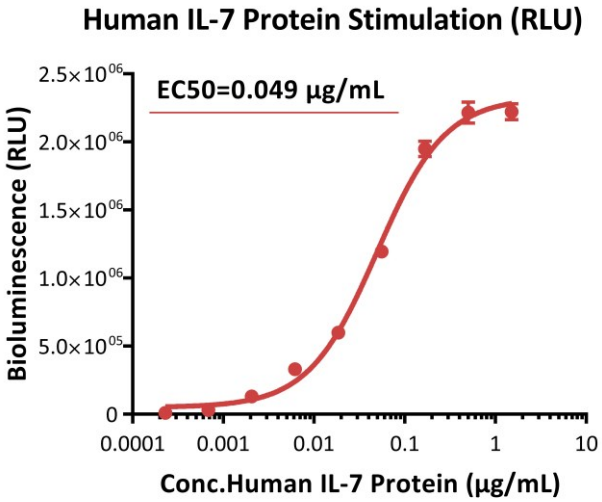

Fig2. Response to human IL-7 protein (RLU). The Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell was stimulated with serial dilutions of human IL-7 protein (Cat.No.IL7-H4219). The EC50 was approximately 0.049 μg/mL.

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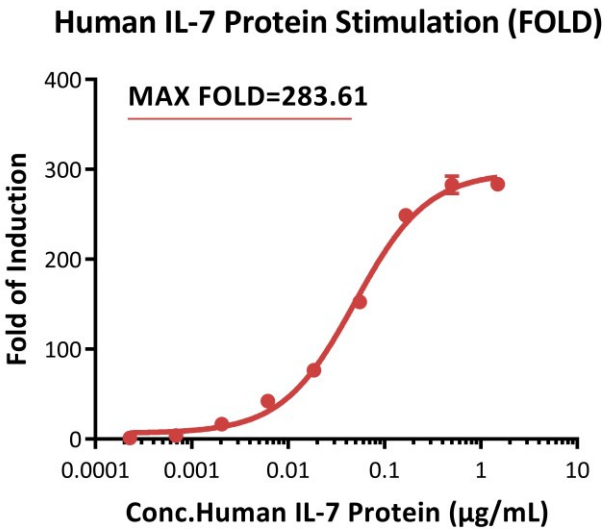

Fig3. Response to human IL-7 protein (FOLD). The Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell was stimulated with serial dilutions of human IL-7 protein (Cat.No.IL7-H4219). The max induction fold was approximately 283.61.

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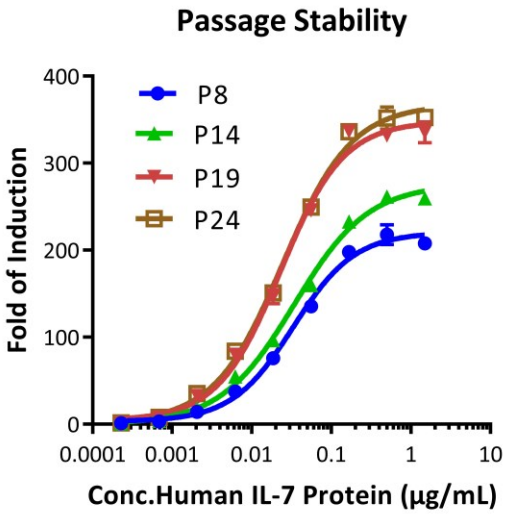
• ***Passage Stability***



	P8	P14	P19	P24
EC50(ug/mL)	0.03324	0.03428	0.02305	0.02457
Max Fold	217.76	261.64	336.57	352.35

Fig4. Passage stability analysis by Signaling Bioassay. The continuously growing Human IL-7 R alpha/CD132 (Luc) HEK293 Reporter Cell was stimulated with serial dilutions of human IL-7 protein. Human IL-7 protein stimulated response demonstrates passage stabilization (fold induction and EC50) across passage 8-24.

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• *License Disclosure*

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• *Related Products*

Products	Cat.No.
Human IL-7 Protein, premium grade	IL7-H4219