

Product Sheet

Cynomolgus_IL22 Reporter 293 Cell Line

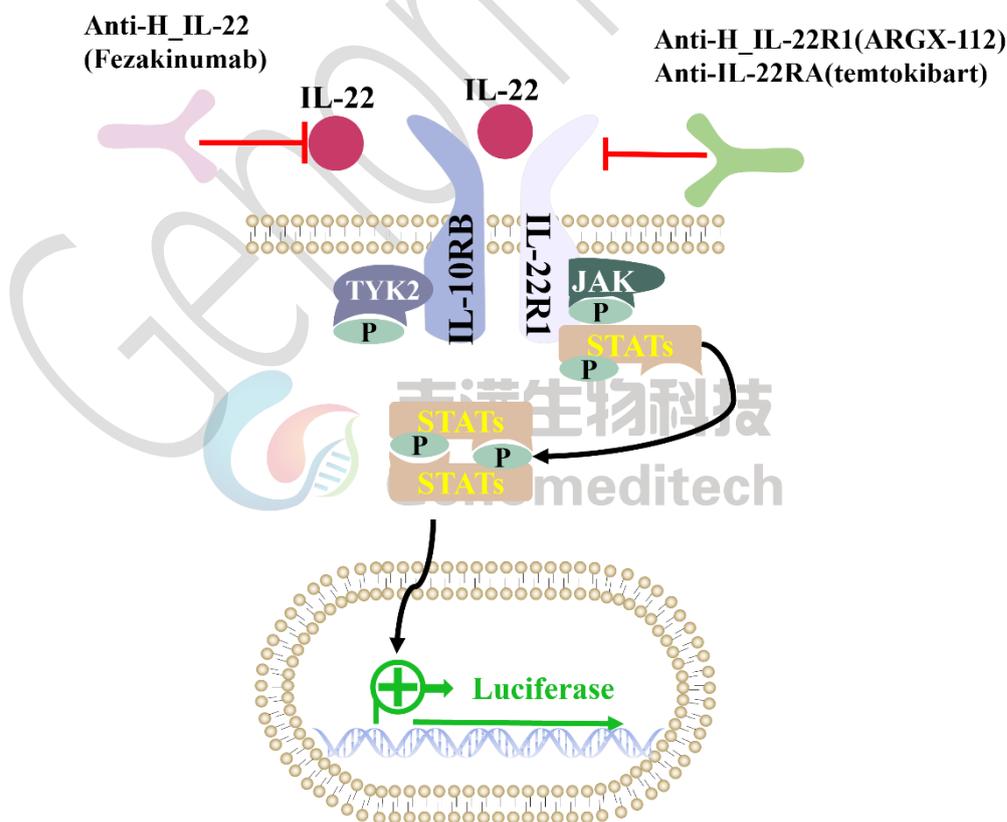
Catalog number: GM-C41371

Version 3.3.1.260201

IL-22 is a cytokine belonging to the IL-10 family, primarily produced by activated T cells and innate lymphoid cells (ILCs). It plays an important role in maintaining tissue homeostasis and defending against infections, particularly in the protection of epithelial cells. IL-22 exerts its biological effects by binding to its receptor composed of IL-22R1 and IL-10R2 heterodimers, activating the downstream JAK1-STAT3 signaling pathway.

By binding to the heterodimeric receptor formed by IL-22R1 and IL-10R2, IL-22 activates the JAK1-STAT3 signaling pathway, primarily activating STAT3, but also capable of activating STAT1 and STAT5. Additionally, IL-22 can trigger the NF- κ B, MAPK, and PI3K-Akt-mTOR signaling pathways.

Cynomolgus_IL22 Reporter 293 Cell Line is a clonal stable HEK-293 cell line constructed using lentiviral technology, constitutive expression of the Cynomolgus IL-22R1 gene and Cynomolgus IL-10RB gene, along with signal-dependent expression of a luciferase reporter gene. When IL-22 binds to IL-22R1 and IL-10RB heterodimers, it activates downstream signaling pathways, leading to the expression of luciferase. Blockade antibodies can inhibit this signal transmission. The luciferase activity measurement indicates the activation level of the signaling pathway and can thus be used to evaluate the in vitro effects of drugs related to IL-22.



Specifications

Quantity	5E6 Cells per vial, 1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Recovery Medium	DMEM+10% FBS+1% P.S
Growth medium	DMEM+10% FBS+1% P.S+4 µg/mL Blasticidin+400 µg/mL G418+125 µg/mL Hygromycin+0.75 µg/mL Puromycin
Note	None
Freezing Medium	90% FBS+10% DMSO
Growth properties	Adherent
Growth Conditions	37°C, 5% CO ₂
Mycoplasma Testing	The cell line has been screened to confirm the absence of Mycoplasma species.
Safety considerations	Biosafety Level 2
Note	It is recommended to expand the cell culture and store a minimum of 10 vials at an early passage for potential future use.

Materials

Reagent	Manufacturer/Catalogue No.
DMEM	Gibco/C11995500BT
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/ GM-040404
G418	Genomeditech/ GM-040402
Hygromycin	Genomeditech/ GM-040403
Cynomolgus IL-22 Protein	kactusb/IL2-CM122
Anti-IL-22RA hIgG1 Reference Antibody (Temtobio)	Genomeditech/ GM-88094MAB
Anti-H_IL-22 hIgG1 Antibody(Fezakinumab)	Genomeditech/ GM-46509AB
Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112)	Genomeditech/ GM-46382AB
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/ GM-040513

Figures

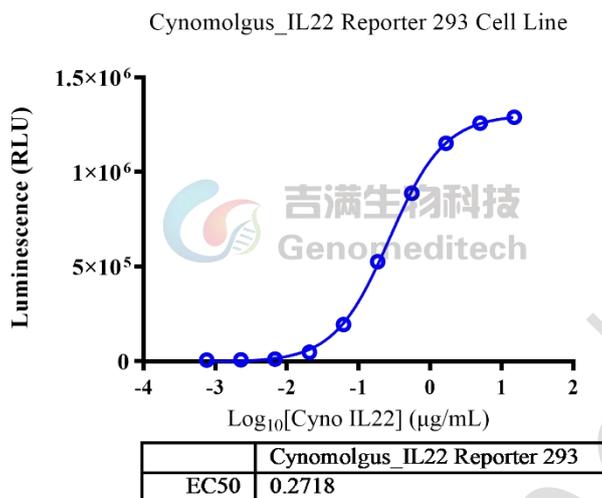


Figure 1 | Response to Cynomolgus IL-22 Protein. The Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of Cynomolgus IL-22-His (Kactus/IL2-CM122) in assay buffer (DMEM+1% FBS+1% P.S) for 16 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [295.2]. Data are shown by drug mass concentration.

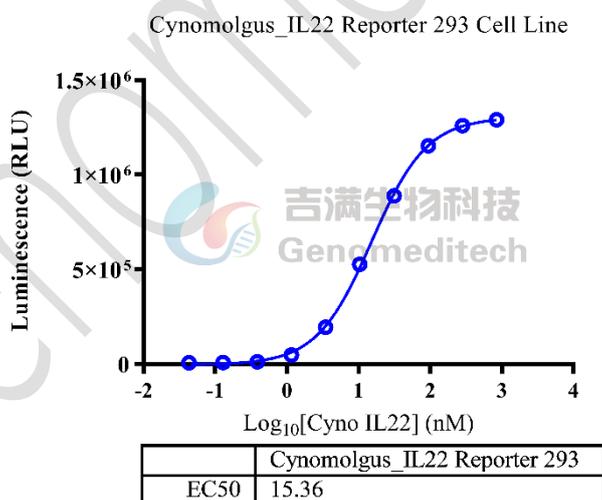


Figure 2 | Response to Cynomolgus IL-22 Protein. The Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of Cynomolgus IL-22-His (Kactus/IL2-CM122) in assay buffer (DMEM+1% FBS+1% P.S) for 16 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [295.2]. Data are shown by drug molar concentration.

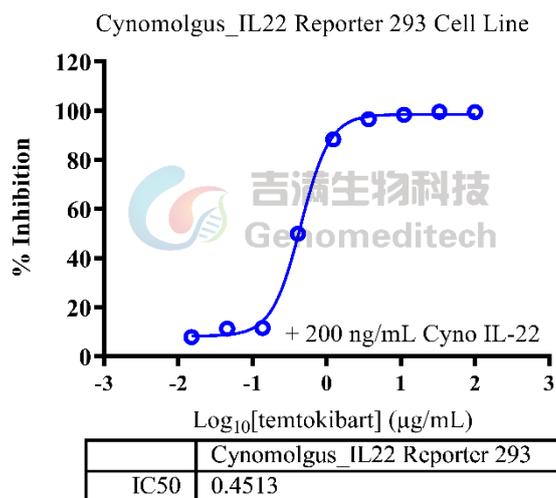


Figure 3 | Response to Anti-IL-22RA hIgG1 Reference Antibody (Temtobio). Serial dilutions of the Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. [GM-88094MAB](#)) was incubated with 1.5E4 cells/well of the Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) in a 96-well plate for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). Subsequently, the Cynomolgus IL-22 (Kactus/IL2-CM122) at a concentration of 20 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [75.5]. Data are shown by drug mass concentration.

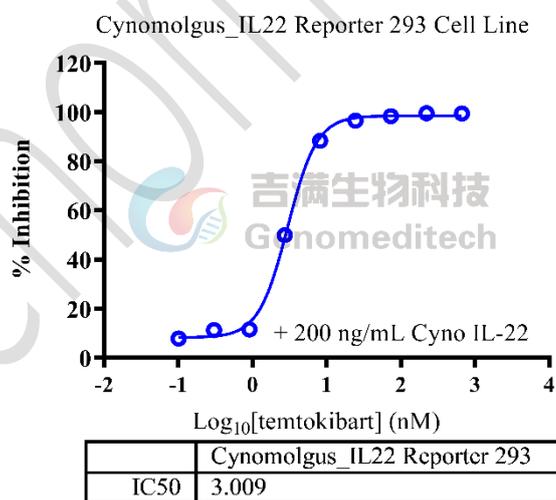


Figure 4 | Response to Anti-IL-22RA hIgG1 Reference Antibody (Temtobio). Serial dilutions of the Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. [GM-88094MAB](#)) was incubated with 1.5E4 cells/well of the Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) in a 96-well plate for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). Subsequently, the Cynomolgus IL-22 (Kactus/IL2-CM122) at a concentration of 20 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the

Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [75.5]. Data are shown by drug molar concentration.

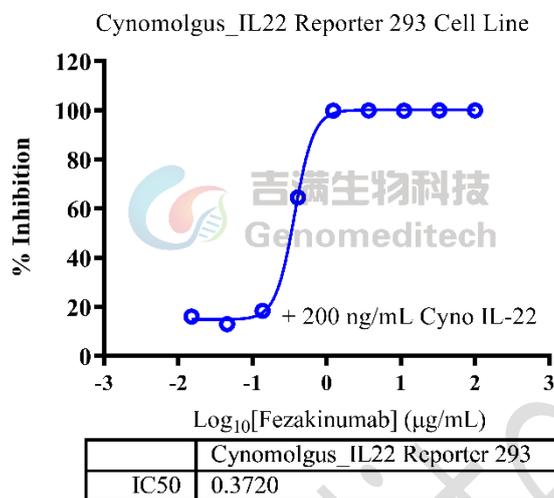


Figure 5 | Response to Anti-H_IL-22 hIgG1 Antibody(Fezakinumab). Serial dilutions of Anti-H_IL-22 hIgG1 Antibody(Fezakinumab) (Cat. [GM-46509AB](#)) was incubated with 20 ng/well of Cynomolgus IL-22 (Kactus/IL2-CM122) for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). After pre-incubation, add the mixture to the Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) at a density of 1.5E4 cells/well in a 96-well format, and incubate for 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [80.7]. Data are shown by drug mass concentration.

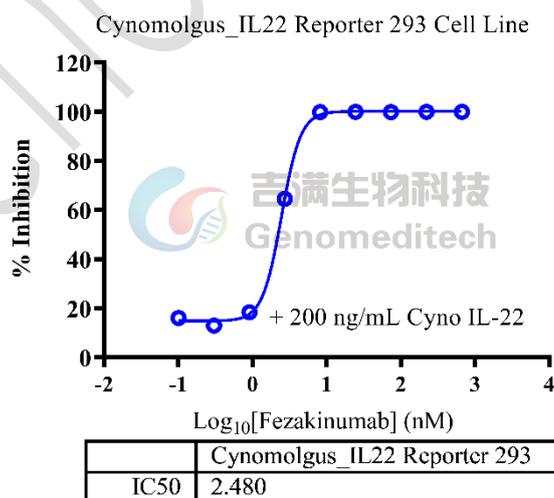


Figure 6 | Response to Anti-H_IL-22 hIgG1 Antibody(Fezakinumab). Serial dilutions of Anti-H_IL-22 hIgG1 Antibody(Fezakinumab) (Cat. [GM-46509AB](#)) was incubated with 20 ng/well of Cynomolgus IL-22 (Kactus/IL2-CM122) for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). After pre-incubation, add the mixture to the

Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) at a density of 1.5E4 cells/well in a 96-well format, and incubate for 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [80.7]. Data are shown by drug molar concentration.

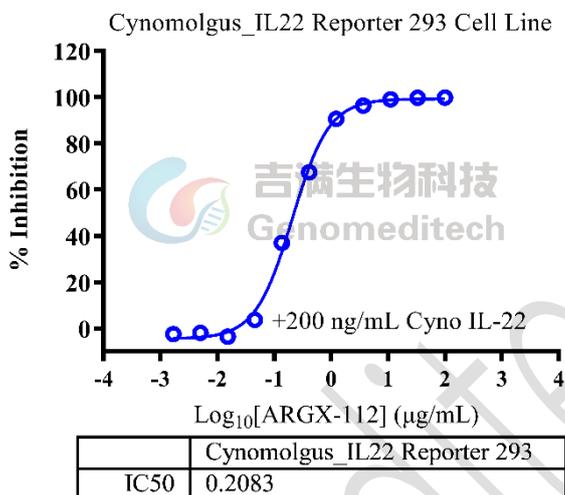


Figure 7 | Response to Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112). Serial dilutions of the Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112) (Cat. [GM-46382AB](#)) was incubated with 1.5E4 cells/well of the Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) in a 96-well plate for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). Subsequently, the Cynomolgus IL-22 (Kactus/IL2-CM122) at a concentration of 20 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [138.4]. Data are shown by drug mass concentration.

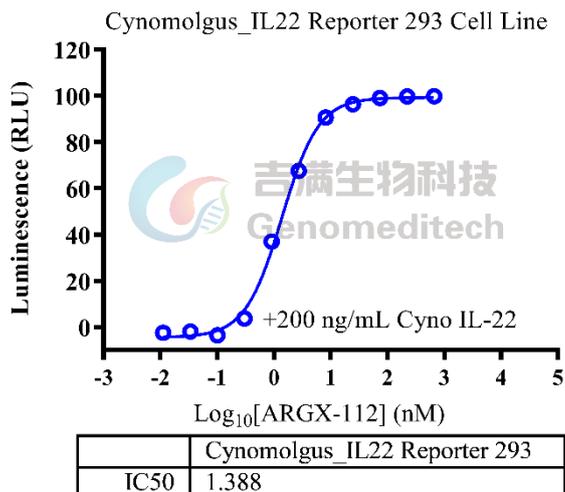


Figure 8 | Response to Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112). Serial dilutions of the Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112) (Cat. [GM-46382AB](#)) was incubated with 1.5E4 cells/well of the Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) in a 96-well plate for 1 hour in assay buffer (DMEM+1% FBS+1% P.S). Subsequently, the Cynomolgus IL-22 (Kactus/IL2-CM122) at a concentration of 20 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [138.4]. Data are shown by drug molar concentration.

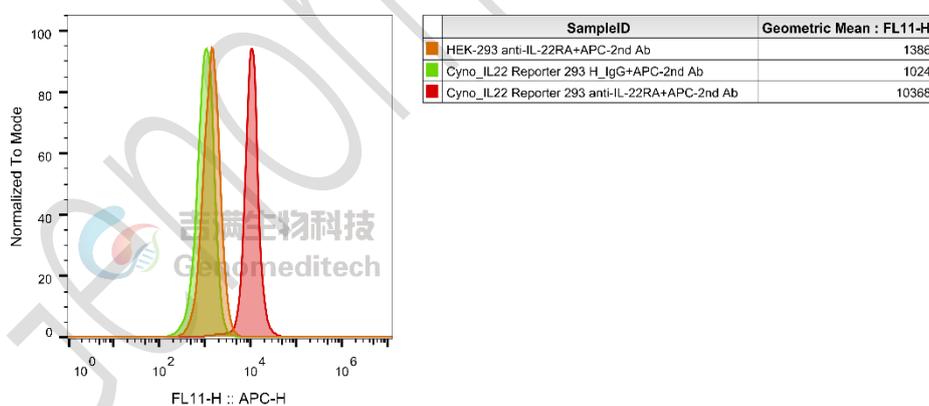


Figure 9 | Cynomolgus_IL22 Reporter 293 Cell Line(Cat. GM-C41371) was determined by flow cytometry using Anti-IL-22RA hIgG1 Reference Antibody (TemtoBio) (Cat. [GM-88094MAB](#)).

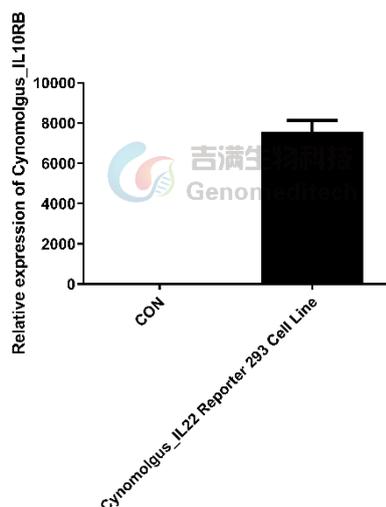


Figure 10 | The mRNA expression levels of Cynomolgus_IL22 Reporter 293 Cell Line (Cat. GM-C41371) were determined by RT-Qpcr.

Cell Recovery

Recovery Medium: DMEM+10% FBS+1% P.S

To insure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at -70°C . Storage at -70°C will result in loss of viability.

- Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 - 3 minutes).
- Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
- Transfer the vial contents to a centrifuge tube containing 5.0 mL complete culture medium and spin at approximately $176 \times g$ for 5 minutes. Discard supernatant.
- Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.
- Incubate the culture at 37°C in a suitable incubator. A 5% CO_2 in air atmosphere is recommended if using the medium described on this product sheet.

Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

- Centrifuge at $176 \times g$ for 3 minutes to collect cells.
- Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5×10^6 cells/mL.
- Aliquot 1 mL into each vial.

- d) Place the vial in a controlled-rate freezing container and store at -80°C for at least 1 day, then transfer to liquid nitrogen as soon as possible.

Cell passage

Growth medium: DMEM+10% FBS+1% P.S+4 $\mu\text{g}/\text{mL}$ Blasticidin+400 $\mu\text{g}/\text{mL}$ G418+125 $\mu\text{g}/\text{mL}$ Hygromycin+0.75 $\mu\text{g}/\text{mL}$ Puromycin

For the first 1 to 2 passages post-resuscitation, use the recovery medium. Once the cells have stabilized, switch to a growth medium.

- Subculturing is necessary when the cell density reaches 80%. It is recommended to perform subculturing at a ratio of 1:3 to 1:4 every 2-3 days. Ensure that the density does not exceed 80%, as overcrowding can lead to reduced viability due to compression.
- Remove and discard culture medium.
- Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.
- Add 1.0 mL of 0.25% (w/v) Trypsin-EDTA solution to dish and observe cells under an inverted microscope until cell layer is dispersed (usually within 30 to 60 seconds at 37°C).
- Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal.
- Add 2.0 mL of growth medium to mix well and aspirate cells by gently pipetting.
- After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.
- Incubate cultures at 37°C .

Subcultivation Ratio: A subcultivation ratio of 1:3 - 1:4 is recommended

Medium Renewal: Every 2 to 3 days

Notes

- Upon initial thawing, a higher number of dead cells is observed, which is a normal phenomenon. Significant improvement is seen after adaptation. Once the cells reach a stable state, the number of dead cells decreases after subculturing and the cell growth rate becomes stable.
- Ensure that the cell density does not exceed 80%, as overcrowding may lead to reduced viability due to compression.

Related Products

IL-22	
H_IL22 Reporter 293 Cell Line	Cynomolgus_IL22R HEK-293 Cell Line
H_IL22R CHO-K1 Cell Line	H_IL22R HEK-293 Cell Line
Mouse_IL22R HEK-293 Cell Line	H_IL20 IL22 IL24 Reporter 293 Cell Line
Anti-H_IL-22 hIgG1 Antibody(Fezakinumab)	Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112)
Anti-IL-22RA hIgG1 Antibody (280.346.TSY)	Anti-IL-22RA hIgG1 Reference Antibody (Temtobio)
Biotinylated Human IL-22 Protein; His-Avi Tag	Human IL-22 Protein; His Tag

Human IL-22BP Protein; hFc Tag

Mouse IL-22RA1 Protein; His Tag

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