293T human CD80 Cell Line

Cat. No: KC-0231 Version 17103101

Ⅰ. Cell Line Information

Catalog number	KC-0231
Cell line name:	293T human CD80 Cell Line
Gene ID/Accession #:	NM_005191.3
Host cell line	293T
Cell type:	Human embryonic kidney
Description:	HEK293T cell line stable expressing exogenous human CD80 gene
Quantity:	One vial of frozen cells ($5X10^6$ per vial)
Stability:	Stable in culture over a minimum of 10 passages
Application:	Drug screening and biological assays
Freeze medium:	70% DMEM + 20% FBS + 10% DMSO
Propagation medium:	DMEM + 10% FBS + 0.5ug/ml Puromycin
Selection marker:	Puromycin
Morphology:	Fibroblastoid cells growing as monolayer
Subculture:	Split saturated culture 1:4~1:5 every 2~3 days; seed out at about 1-3 x 10^5 cells/ml
Incubation:	37 °C with 5% CO_2
Doubling time:	Approximately 30 hours
Mycoplasma status:	Negative
Biosafety level:	1
Storage:	Liquid nitrogen immediately upon receiving

Ⅱ. Background

CD80, also named as B7-1, is type I membrane protein and belongs to immunoglobulin superfamily. CD80 is found on the surface of various immune cells, such as DCs, B cells, monocytes, etc. CD80 often works closely to CD86 (B7-2) in tandem to prime T cells after binding with their receptor CTLA4 and CD28.

Ⅲ. Cell Line Generation

293T human CD80 cell line was generated using lentiviral vector expressing human CD80 sequence.

IV. Characterization using FACS

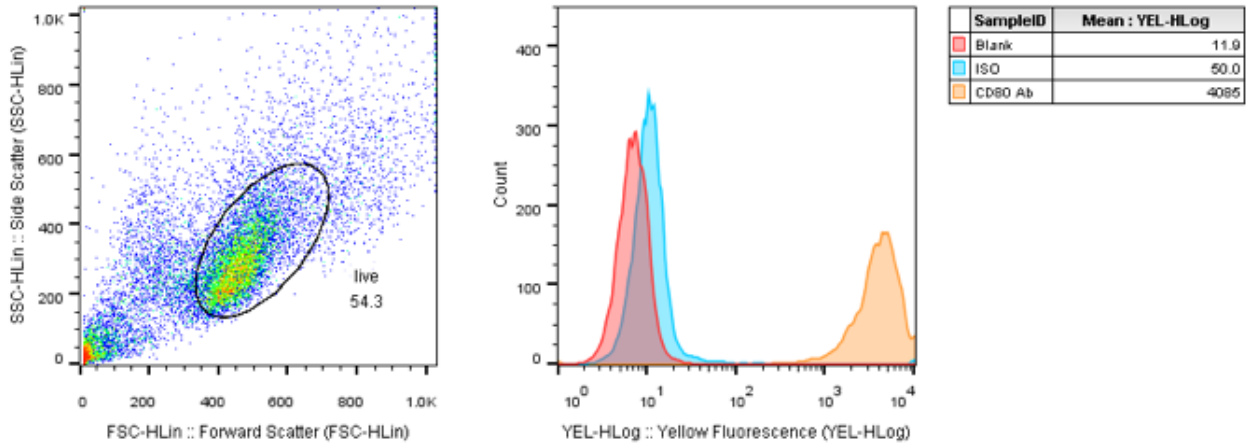

Figure: Characterization of CD80 overexpressing in 293T stable clones using FACS.

V. Application

Hybridoma or Binders of ligand screening with FACS.

VI. Cell Resuscitation

1. Prewarm culture medium (DMEM supplemented with 10% FBS and 0.5ug/ml puromycin) in a 37°C water bath.
2. Thaw the frozen vial in a 37°C water bath for 1-2 minutes.
3. Transfer the vial into biosafety cabinet, and wipe the surface with 70% ethanol.
4. Unscrew the top of the vial and transfer the cell suspension gently into a sterile centrifuge tube containing 9.0 mL complete culture medium.
5. Spin at ~ 125 x g for 5~7 minutes at room temperature, and discard the supernatant without disturbing the pellet.
6. Resuspend cell pellet with the appropriate volume of complete medium and transfer the cell suspension into a T25 culture flask.
7. Incubate the flask at 37°C, 5% CO_2 incubator.
8. Split saturated culture 1:4 ~ 1:5 every 2~3 days; seed out at about 1-3 x 10^5 cells/ml.

VII. Cell Freezing

1. Prepare the freezing medium (70% DMEM + 20% FBS + 10% DMSO) fresh immediately before use.
2. Keep the freezing medium on ice and label cryovials.
3. Harvest cells to a sterile, conical centrifuge tube during the logarithmic growth period and count the cells.
4. Centrifuge the cells at 250 x g for 5 minutes at room temperature and carefully aspirate off the medium.
5. Resuspend the cells at a density of at least 3 x10^6 cells/ml in chilled freezing medium.
6. Aliquot 1 ml of the cell suspension into each cryovial.

7. Freeze cells in the CoolCell freezing container overnight in a −80°C freezer.
8. Transfer vials to liquid nitrogen for long-term storage.

VIII. References

1. Peach, R. J., Bajorath, J., Naemura, J., Leytze, G., Greene, J., Aruffo, A., & Linsley, P. S. (1995). Both Extracellular Immunoglobin-like Domains of CD80 Contain Residues Critical for Binding T Cell Surface Receptors CTLA-4 and CD28. Journal of Biological Chemistry, 270(36), 21181–21187. https://doi.org/10.1074/jbc.270.36.21181
2. van der Merwe, P. A., Bodian, D. L., Daenke, S., Linsley, P., & Davis, S. J. (1997). CD80 (B7-1) Binds Both CD28 and CTLA-4 with a Low Affinity and Very Fast Kinetics. The Journal of Experimental Medicine, 185(3), 393–404. https://doi.org/10.1084/jem.185.3.393

Kyinno Biotechnology Co., Ltd.

Yizhuang Biomedical Park, No. 88, Beijing, China
Tel: +86-10-58222702
E-mail: bd@kyinno.com
Web: www.kyinno.com

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