

DESCRIPTION

Cell Line Name	Human LILRB1-CHO-K1 stable cell line
Gene Sequence	Q8NHL6 (Full-length cDNA)
Host Cell	CHO-K1 (Adherent cells)
Quantity	Two vials of frozen cells (~1x10 ⁶ per vial)
Culture Medium	DMEM with 10% FBS and 4 µg/mL puromycin
Freezing Medium	90% FBS and 10% DMSO
Storage	Liquid nitrogen

BACKGROUND

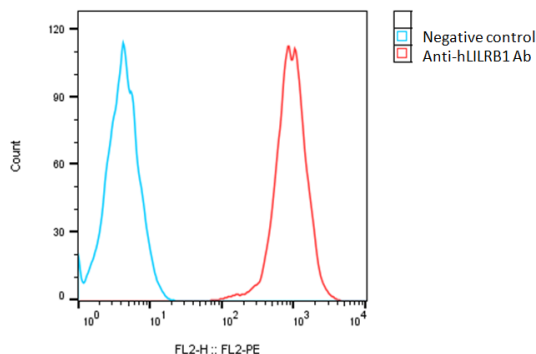
Leukocyte immunoglobulin-like receptor B1 (LILRB1), also known as leukocyte immunoglobulin-like receptor 8 (LIR-8), is a type I transmembrane protein belonging to the immunoglobulin superfamily. It is expressed on the surface of various immune cells, including monocytes, macrophages, dendritic cells, and natural killer (NK) cells. LILRB1 is characterized by its extracellular domain, which contains four immunoglobulin-like domains and two cytoplasmic immunoreceptor tyrosine-based inhibitory motifs (ITIMs). Through its ITIMs, LILRB1 recruits tyrosine phosphatases to inhibit the activity of immune cells like NK cells, monocytes, macrophages, and T and B cells. LILRB1 has been shown to play a role in various biological processes, including phagocytosis, cytokine production, and immune tolerance. In cancer, LILRB1 expression is increased leading to tumor progression, immune evasion and metastasis. Specifically, LILRB1 binds to tumor cells expressing beta 2 microglobulin complexed with MHC class I, allowing an escape from T cell recognition. Given its natural inhibitory function, LILRB1 is immunosuppressive and indirectly tumor supporting. Therefore studies suggest that targeting LILRB1 or disrupting the MHC class I-LILRB1 signaling axis can stop tumor progression in cancer, making LILRB1 a focus as a therapeutic target for cancer treatment.

THAWING AND CULTURING

- Remove the cell vial from liquid nitrogen tank and thaw cells quickly in a 37°C water bath
- Transfer cells to a 15 ml conical tube containing 4 ml of culture medium
- Centrifuge the tube at 200x g for 5 min and discard the supernatant
- Resuspend the cell pellet with 7 ml of culture medium and transfer the cells to a 25 ml cell culture flask
- Incubate the T25 flask in a CO₂ incubator with 5% CO₂ at 37°C.
- Split cells twice a week or as needed.

DATA

Detection of human LILRB1 expression on CHO-K1 cells using PE-anti human LILRB1 antibody (BioLegend #333708)



REFERENCES

- Barkal AA, Weiskopf K, Kao KS, Gordon SR, Rosental B, Yiu YY, George BM, Markovic M, Ring NG, Tsai JM, McKenna KM, Ho PY, Cheng RZ, Chen JY, Barkal LJ, Ring AM, Weissman IL, Maute RL. Engagement of MHC class I by the inhibitory receptor LILRB1 suppresses macrophages and is a target of cancer immunotherapy. *Nat Immunol.* 2018 Jan;19(1):76-84. doi: 10.1038/s41590-017-0004-z. Epub 2017 Nov 27. PMID: 29180808; PMCID: PMC5832354.
- Deng M, Chen H, Liu X, Huang R, He Y, Yoo B, Xie J, John S, Zhang N, An Z, Zhang CC. Leukocyte immunoglobulin-like receptor subfamily B: therapeutic targets in cancer. *Antib Ther.* 2021 Feb 9;4(1):16-33. doi: 10.1093/abt/tbab002. PMID: 33928233; PMCID: PMC7944505.

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