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InnoCyto Inc.

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FITC Anti-Human CD7 Antibody

Catalog Number:	118803, 118804
Size:	25 tests, 100 tests
Target Name:	CD7, gp40
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	Grisnilimab
Application:	Flow Cytometry
Reactivity:	Human
Format:	FITC
Isotype:	Human IgG1
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	Supplied at a lot-specific concentration.
Storage & Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use 5 µL of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. FITC has an excitation max at 493 nm and an emission max at 525 nm.
Excitation Laser:	Blue Laser (488 nm)
Isotype Control:	301205
:	Human Peripheral Blood Mononuclear Cells was stained purified Anti-Human CD40 clone 040AM1 (color-filled histogram) or an isotype control (gray histogram), followed by PE anti-Mouse IgG.

BACKGROUND INFORMATION

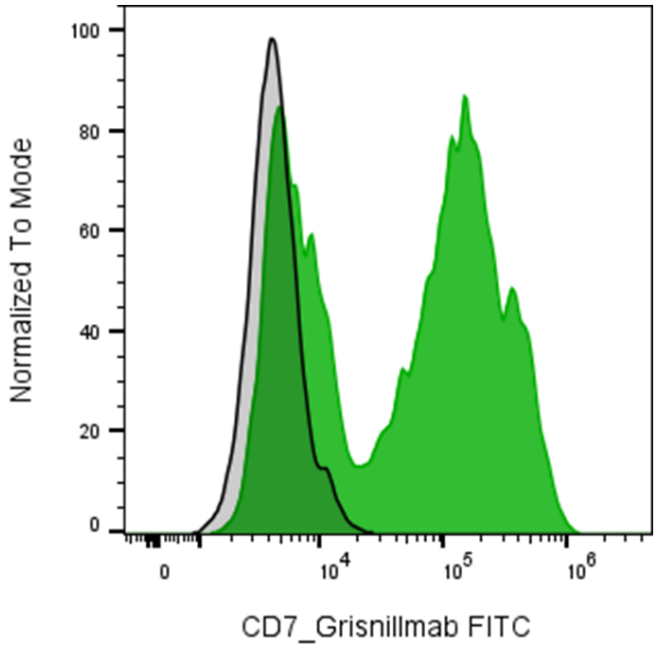
Human CD7 is a 40-kDa type I transmembrane glycoprotein and one of the earliest surface markers expressed during T-cell development. It is present on the majority of mature T cells and natural killer (NK) cells, as well as on early lymphoid and some myeloid progenitors. CD7 belongs to the immunoglobulin superfamily and contains a single extracellular immunoglobulin-like domain, a transmembrane region, and a short cytoplasmic tail containing signaling motifs. CD7 contributes to T-cell and NK-cell activation, adhesion, and cytokine production, functioning primarily as a costimulatory molecule that can amplify signals generated through the T-cell receptor.

The best-characterized ligand for human CD7 is secreted and transmembrane protein 1 (SECTM1), which exists in both membrane-bound and soluble forms. Interaction between SECTM1 and CD7 can promote T-cell proliferation and enhance cytokine production, including interferon-γ and IL-2, particularly in cooperation with other costimulatory signals.

CD7 itself is not generally considered a disease-causing molecule, but its expression pattern makes it an important biomarker and therapeutic target in hematological malignancies. CD7 is expressed in more than 95% of T-cell acute lymphoblastic leukemia (T-ALL) and T-cell lymphoblastic lymphoma (T-LBL), and is also present in subsets of peripheral T-cell lymphomas and acute myeloid leukemia.

Therapeutically, CD7 is being extensively investigated as a target for monoclonal antibodies, antibody-drug conjugates, immunotoxins, and particularly CAR-T-cell therapy. CD7 CAR-T cells have shown promising responses in relapsed or refractory T-ALL/LBL and other CD7-positive malignancies. A major challenge is “fratricide,” because normal T cells and the engineered CAR-T cells themselves express CD7. Gene editing, protein masking, and other engineering strategies are therefore being developed to prevent CAR-T self-killing and improve treatment durability.

PRODUCT DATA



Human peripheral blood lymphocytes were stained with FITC Anti-Human CD7 biosimilar Grisnilimab (color-filled histogram) or an isotype control (gray histogram).