

iF647 Anti-Mouse/Human integrin β 7 Antibody

Catalog Number:	208103, 208104
Size:	25 μ g, 100 μ g
Target Name:	Integrin β 7, β 7 Integrin, integrin β p, ITGB7
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	FIB27
Application:	Flow Cytometry
Reactivity:	Mouse, Human
Format:	iF647
Isotype:	Rat IgG2a
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	0.2 mg/mL
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 less than 0.2 μ g of this reagent per 0.5-1.0 million cells in a 100 μ L volume. Optimal reagent performance should be determined by titration for each specific application. iF647 has an excitation max at 656 nm and an emission max at 670 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Control:	303512

BACKGROUND INFORMATION

Human and mouse integrin β 7 (ITGB7) is a leukocyte adhesion receptor subunit that regulates immune-cell trafficking, adhesion, and retention, particularly at mucosal surfaces. β 7 does not function alone but forms heterodimers with two α subunits: α 4 β 7 and α E β 7 (CD103). α 4 β 7 is expressed prominently on gut-homing lymphocytes and mediates their migration from the circulation into intestinal tissues, whereas α E β 7 contributes to retention of lymphocytes within epithelial compartments.

:contentReference[oaicite:0]{index=0}

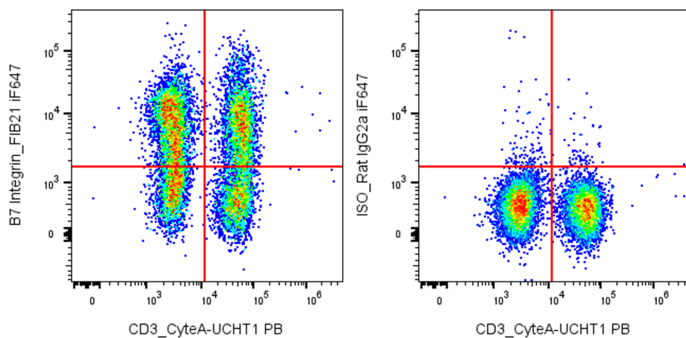
β 7 is a type I transmembrane integrin protein containing a large extracellular domain, a single transmembrane helix, and a short cytoplasmic tail involved in intracellular signaling. Like other integrins, β 7-containing heterodimers undergo conformational changes that regulate ligand affinity and transmit bidirectional signals between the extracellular environment and the cytoskeleton. The principal ligand for α 4 β 7 is mucosal addressin cell adhesion molecule-1 (MAdCAM-1), which is highly expressed on endothelial cells in intestinal tissues. α 4 β 7 can also interact with VCAM-1 under certain conditions. The principal ligand for α E β 7 is E-cadherin on

epithelial cells. :contentReference[oaicite:1]{index=1}

β 7-mediated trafficking and retention are physiologically important for intestinal immune surveillance but can contribute to chronic inflammation. Increased α 4 β 7-MAdCAM-1 interactions promote recruitment of inflammatory lymphocytes into the intestinal mucosa in Crohn's disease and ulcerative colitis. α E β 7-E-cadherin interactions can additionally promote retention of activated lymphocytes within intestinal epithelium. β 7-positive immune cells and their ligands have also been implicated in other inflammatory disorders, although evidence varies among diseases. :contentReference[oaicite:2]{index=2}

Because β 7 controls mucosal immune-cell trafficking, it is an important therapeutic target. Vedolizumab selectively targets α 4 β 7 and blocks its interaction with MAdCAM-1, providing gut-selective immunomodulation and established treatment for inflammatory bowel disease. Anti- β 7 approaches such as etrolizumab target both α 4 β 7 and α E β 7, potentially inhibiting both lymphocyte recruitment and epithelial retention. Thus, β 7 represents an attractive target for developing therapies for inflammatory and autoimmune diseases involving pathological mucosal immune-cell trafficking. :contentReference[oaicite:3]{index=3}

PRODUCT DATA



Human peripheral blood lymphocytes were stained with PB Anti-Human CD3 clone 003CB and iF647 Anti-Mouse/Human integrin β 7 clone FIB27 (left) or an isotype control (right).

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