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iF488 Anti-mouse CD150 (SLAM) Antibody

Catalog Number:	202003, 202004
Size:	25 μg, 100 μg
Target Name:	CD150, SLAM, IPO-3
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	TC15-12F12.2
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	iF488
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:	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 less than 0.5 µg 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. iF488 has an excitation max at 491 nm and an emission max at 516 nm.
Excitation Laser:	Blue Laser (488 nm)
Isotype Control:	300202
RRID:	AB_3739075

BACKGROUND INFORMATION

CD150, also known as SLAMF1 (Signaling Lymphocytic Activation Molecule Family member 1), is an immunoregulatory cell surface receptor involved in lymphocyte activation, differentiation, and immune coordination. It is expressed primarily on immune cells, including activated T cells, B cells, dendritic cells, macrophages, and certain innate lymphoid cell subsets. CD150 is a founding member of the SLAM family, a group of receptors that fine-tune immune responses through cell-cell interactions.

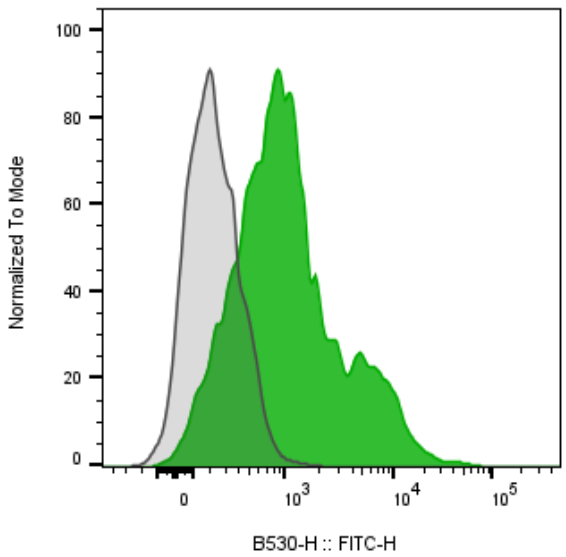
Structurally, CD150 is a type I transmembrane glycoprotein belonging to the immunoglobulin superfamily. Its extracellular region consists of two Ig-like domains: a membrane-distal variable (V)-like domain and a membrane-proximal constant (C2)-like domain. These domains mediate receptor engagement, which occurs primarily through homophilic binding, meaning CD150 on one cell binds to CD150 on another. The cytoplasmic tail contains conserved immunoreceptor tyrosine-based switch motifs (ITSMs), which are essential for downstream signaling.

Functionally, CD150 acts as a costimulatory and regulatory receptor. Upon engagement, the ITSMs recruit adaptor proteins such as SLAM-associated protein (SAP) or EAT-2, which determine the qualitative outcome of signaling. Through these interactions, CD150 influences pathways controlling cytokine production, cell proliferation, cytotoxicity, and immune synapse formation. In T and B cells, CD150 signaling modulates activation and antibody responses, while in macrophages and dendritic cells it contributes to microbial sensing and inflammatory cytokine production.

CD150 plays important roles in disease. Disruption of signaling downstream of CD150, particularly due to mutations in SAP, leads to X-linked lymphoproliferative disease (XLP), a severe immunodeficiency characterized by uncontrolled immune activation, especially following Epstein-Barr virus infection. CD150 is also a well-established cellular receptor for measles virus, enabling viral entry into immune cells and contributing to the profound immunosuppression observed during measles. Altered CD150 expression or signaling has additionally been linked to autoimmune disease, chronic inflammation, and certain hematologic malignancies.

Therapeutically, CD150 is relevant as both a biomarker and a potential immunomodulatory target. It is used to identify activated immune cell populations and to study immune dysregulation. Modulating CD150 signaling is being explored as a strategy to enhance immune responses in cancer and chronic infection or to suppress pathological activation in autoimmune conditions. Furthermore, understanding CD150-mediated viral entry has informed vaccine and antiviral research, underscoring its translational significance.

PRODUCT DATA



Mouse splenocytes stained with either IF488 Anti-mouse CD150 clone TC15-12F12.2 (color-filled histogram) or an isotype control (gray histogram).

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