

CD150/SLAMF1 Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P76074
Synonyms:	Signaling Lymphocytic Activation Molecule; CDw150; IPO-3; CD150; SLAMF1; SLAM
Species:	Rat
Source:	HEK293
Accession:	D3ZAD7 (M1-L242)
Gene ID:	498286
Molecular Weight:	Approximately 51.3 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The CD150/SLAMF1 protein functions as a self-ligand receptor within the signaling lymphocytic activation molecule (SLAM) family, engaging in homo- or heterotypic cell-cell interactions that modulate the activation and differentiation of a diverse array of immune cells. This involvement positions CD150/SLAMF1 at the core of the regulatory network governing both innate and adaptive immune responses. The protein's activities are finely regulated by the presence or absence of small cytoplasmic adapter proteins, including SH2D1A/SAP and/or SH2D1B/EAT-2. CD150/SLAMF1 exhibits distinct signal-transduction events in T-lymphocytes compared to B-cells, with two discernible modes of signaling. One mode depends on SH2D1A (and perhaps SH2D1B), while the other operates through protein-tyrosine phosphatase 2C (PTPN11)-dependent signal transduction. Initially proposed to associate with SH2D1A to prevent binding to inhibitory effectors, such as INPP5D/SHIP1 and PTPN11/SHP-2, signaling is also regulated by SH2D1A, which can interact with and recruit FYN, subsequently phosphorylating and activating CD150/SLAMF1. The protein plays crucial roles in immune responses, inducing IL-2-independent proliferation of activated T-cells and promoting IFN-gamma production. Downstream signaling involves INPP5D, DOK1, and DOK2, inhibiting IFN-gamma production in T-cells, and PRKCQ, BCL10, and NFKB1, enhancing T-cell activation and Th2 cytokine production. CD150/SLAMF1 also facilitates T-cell receptor-induced IL-4 secretion and inhibits antigen receptor-mediated IFN-gamma production in CD4(-)/CD8(-) T-cells. It is essential for IL-4 production by germinal center T follicular helper cells and may inhibit CD40-induced signal transduction in monocyte-derived dendritic cells.

Additionally, CD150/SLAMF1, in conjunction with SLAMF6 and CD84/SLAMF5, may serve as a negative regulator of the humoral immune response. In the context of microbial infection, the protein participates in the innate immune response against Gram-negative bacteria in macrophages, likely recognizing bacterial surface components and regulating phagosome maturation, leading to increased NOX2 activity in the phagosomes.

Caution: Product has not been fully validated for medical applications. For research use only.

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