

FITC-Labeled Siglec-3/CD33 Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P78408
Synonyms:	CD33 molecule; CD33; FLJ00391; gp67; Siglec3; Siglec-3; p67
Species:	Human
Source:	HEK293
Accession:	P20138 (D18-H259)
Gene ID:	945
Molecular Weight:	48-58 kDa

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 10 mM NaH ₂ PO ₄ , 2 mM EDTA, 500 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year, protect from light. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

The Siglec-3/CD33 protein, a sialic-acid-binding immunoglobulin-like lectin, plays a crucial role in mediating cell-cell interactions and maintaining immune cells in a resting state. It exhibits a preference for recognizing and binding alpha-2,3- and more avidly alpha-2,6-linked sialic acid-bearing glycans. Upon engagement with ligands like C1q or sialylated glycoproteins, two immunoreceptor tyrosine-based inhibitory motifs (ITIMs) within CD33's cytoplasmic tail undergo phosphorylation by Src-like kinases such as LCK. These phosphorylated ITIMs serve as docking sites for recruiting and activating protein-tyrosine phosphatases PTPN6/SHP-1 and PTPN11/SHP-2, which, in turn, regulate downstream pathways through dephosphorylation of signaling molecules. CD33's repressive effect on monocyte activation involves phosphoinositide 3-kinase/PI3K. Structurally, the protein forms homodimers through disulfide linkages and interacts with PTPN6/SHP-1 and PTPN11/SHP-2 upon phosphorylation. It also engages with C1QA via its C-terminus, activating CD33 inhibitory motifs.

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

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