Recombinant Human L1CAM Protein, His&Avi tagged

Cat. No. L1CAM-227H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CD171/L1CAM protein (Ile20-Glu1120) with C-terminus His-Avi tag is expressed in CHO cells.
Species	Human
Source	CHO
Conjugation/Label	20-1120 aa
Description	CD171, also known as L1 cell adhesion molecule (L1CAM), is a transmembrane glycoprotein belonging to the immunoglobulin superfamily that plays crucial roles in nervous system development and function. It mediates cell-cell adhesion, neuronal migration, axon guidance, and synapse formation during embryonic development and neural plasticity in adults. L1CAM facilitates these processes through homophilic binding (L1CAM-L1CAM interactions between adjacent cells) and heterophilic interactions with various extracellular matrix proteins and cell surface receptors. Beyond the nervous system, CD171 is involved in cell motility, survival signaling, and tissue organization. Structurally, CD171 is a type I transmembrane protein of approximately 200-220 kDa consisting of several distinct domains. The extracellular region contains six immunoglobulin-like (Ig) domains followed by five fibronectin type III repeats, which mediate protein-protein interactions. These domains enable CD171 to engage in both homophilic and heterophilic binding. The protein also has a single transmembrane domain and a highly conserved cytoplasmic tail that interacts with the actin cytoskeleton through ankyrin binding and participates in intracellular signaling

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	pathways, including activation of kinases such as ERK and PI3K/AKT that promote cell survival and migration. CD171 interacts with multiple ligands, including itself (homophilic binding), integrins (particularly αvβ3 and α5β1), neuropilin-1, axonin-1/TAG-1, and components of the extracellular matrix such as laminin and fibronectin. These diverse interactions enable CD171 to coordinate complex cellular behaviors including adhesion, migration, and signal transduction. The cytoplasmic domain also binds adaptor proteins like ankyrin, ezrin, and AP-2, linking membrane events to cytoskeletal reorganization. In disease contexts, aberrant CD171 expression is implicated in various pathologies. Mutations in the L1CAM gene cause X-linked hydrocephalus and CRASH syndrome (corpus callosum hypoplasia, retardation, adducted thumbs, spasticity, and hydrocephalus), severe neurological disorders affecting brain development. In oncology, CD171 overexpression is observed in numerous cancers, including neuroblastoma, glioblastoma, ovarian, endometrial, pancreatic, and colorectal carcinomas, where it promotes tumor invasion, metastasis, and chemoresistance. Therapeutically, CD171 is being targeted through multiple approaches: monoclonal antibodies, antibody-drug conjugates, chimeric antigen receptor (CAR) T cell therapies, and small molecule inhibitors. Clinical trials are evaluating CD171-directed CAR-T cells for neuroblastoma and other pediatric solid tumors, positioning this molecule as a promising target in precision cancer immunotherapy.
Form	Liquid, 1×PBS buffer, pH7.4, 0.22 μm filtered
Molecular Mass	The protein has a predicted molecular weight of 126.7 kDa. Under DTT-reducing conditions, it migrates at approximately 160-200 kDa on SDS-PAGE.
Purity	>95% based on SDS-PAGE under reducing condition
Applications	ELISA, BLI

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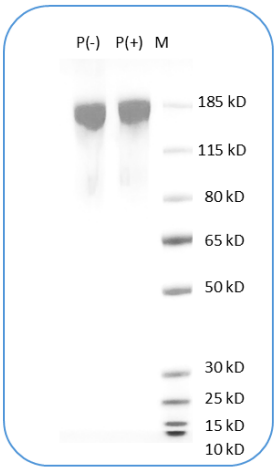
Storage	Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4 centigrade for up to 2 weeks, or at -20 centigrade or below for up to six months. The protein may be further diluted to 0.1 mg/mL using 0.22 μm-filtered PBS buffer (pH 7.4). For long-term storage, the diluted stock solution should be aliquoted and stored at ≤ –70 centigrade to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability.
Concentration	25 μg size is bottled at 0.2 mg/mL concentration. 100 μg size is supplied at a lot-specific concentration.

GENE INFORMATION

Gene Name	L1CAM L1 cell adhesion molecule [Homo sapiens (human)]
Official Symbol	L1CAM
Synonyms	L1CAM; L1 cell adhesion molecule; antigen identified by monoclonal R1, HSAS, HSAS1, MASA, MIC5, S10, SPG1; neural cell adhesion molecule L1; CD171; antigen identified by monoclonal R1; S10; HSAS; MASA; MIC5; SPG1; CAML1; HSAS1; N-CAML1; NCAM-L1; N-CAM-L1;
Gene ID	3897
mRNA Refseq	NM_000425
Protein Refseq	NP_000416
MIM	308840
UniProt ID	P32004

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SDS-PAGE



Human CD171 Protein (C-His-Avi) on SDS-PAGE under reducing condition (P+) and non-reducing condition (P-). The gel was stained for 1 hour with BlinkBlue. The purity of this protein appears to be greater than 95% based on reducing conditions.

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