

## Human CD22 Protein (C-His)

|                           |                       |
|---------------------------|-----------------------|
| <b>Catalog Number:</b>    | 803501, 803502        |
| <b>Size:</b>              | 25 ug, 100 ug         |
| <b>Target Name:</b>       | CD22, SIGLEC2, BL-CAM |
| <b>Regulatory Status:</b> | RUO                   |

### PRODUCT DETAILS

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|-------------------------------|--|
| <b>Application:</b>           | ELISA, BLI   |
| <b>Format:</b>                | Liquid, Purified   |
| <b>Expression Host:</b>       | CHO  |
| <b>Species:</b>               | Human  |
| <b>Sources:</b>               | Human CD22 protein (Asp20-Arg687) with C-terminus His tag is expressed in CHO cells  |
| <b>Accession Number:</b>      | P20273   |
| <b>Molecular Weight:</b>      | The protein has a predicted molecular weight of 76.6 kDa. Under DTT-reducing conditions, it migrates at approximately 100 kDa on SDS-PAGE.   |
| <b>Affinity Tag:</b>          | C-His  |
| <b>Purity:</b>                | >95% based on SDS-PAGE under reducing condition  |
| <b>Formulation:</b>           | 1xPBS buffer, pH7.4, 0.22 µm filtered  |
| <b>Endotoxin level:</b>       | Not tested   |
| <b>Protein Concentration:</b> | 25µg size is bottled at 0.2mg/mL concentration. 100 µg size is supplied at a lot-specific concentration.   |
| <b>Storage and Handling:</b>  | Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4°C for up to 2 weeks, or at -20°C 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°C to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability. |

### BACKGROUND INFORMATION

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CD22 is a B cell-specific transmembrane glycoprotein that functions as an important regulator of B cell receptor (BCR) signaling and immune tolerance. Also known as Siglec-2, CD22 belongs to the sialic acid-binding immunoglobulin-like lectin (Siglec) family and is expressed almost exclusively on mature B cells, with expression increasing as B cells progress from the naïve to mature stages. Through its inhibitory signaling capacity, CD22 helps fine-tune B cell activation and prevent inappropriate immune responses.

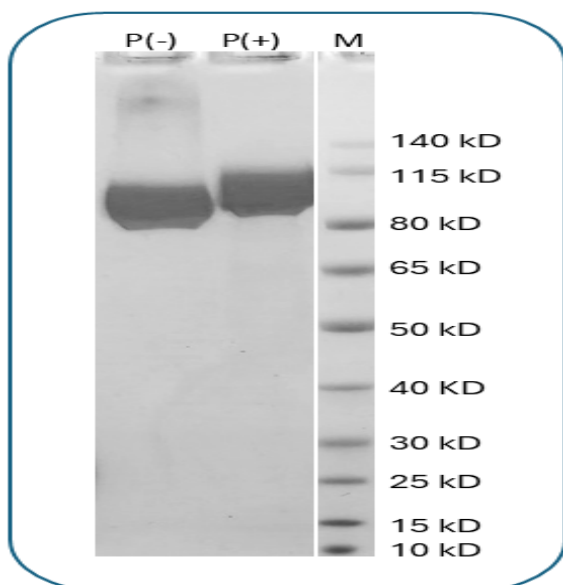
Structurally, CD22 is a type I transmembrane protein with a large extracellular region composed of seven immunoglobulin-like domains. The N-terminal domain mediates binding to sialic acid-containing glycans, which serve as its primary ligands. CD22 preferentially recognizes α2,6-linked sialic acids that are commonly present on glycoproteins and glycolipids expressed on B cells

themselves (cis interactions) as well as on neighboring cells (trans interactions). The cytoplasmic tail of CD22 contains multiple immunoreceptor tyrosine-based inhibitory motifs (ITIMs), which are essential for its signaling function. Functionally, CD22 acts as a negative regulator of BCR signaling. Upon BCR engagement, CD22 becomes phosphorylated and recruits phosphatases such as SHP-1 to its ITIM motifs. These phosphatases attenuate downstream signaling pathways, thereby raising the threshold for B cell activation. Through this mechanism, CD22 contributes to the maintenance of B cell tolerance and limits excessive antibody production. CD22 also influences B cell survival, migration, and interactions within lymphoid tissues.

Dysregulation of CD22 expression or signaling has been linked to immune-mediated diseases and malignancy. Reduced CD22 function can lead to hyperactive B cells and has been associated with autoimmune diseases such as systemic lupus erythematosus. In contrast, CD22 is frequently overexpressed on B cell malignancies, including B cell acute lymphoblastic leukemia (B-ALL) and certain non-Hodgkin lymphomas, making it an attractive diagnostic and therapeutic target.

CD22 plays a significant role in therapeutics, particularly in the treatment of B cell cancers. Antibody-based therapies targeting CD22 have been developed to selectively eliminate malignant B cells. Notably, antibody-drug conjugates and immunotoxins that bind CD22 deliver cytotoxic agents directly to cancerous B cells, sparing most non-B cell populations. CD22 is also being explored as a target for engineered cell therapies and for strategies aimed at modulating B cell activity in autoimmune disease. Together, these approaches highlight CD22 as a key molecule at the intersection of B cell biology, disease, and targeted therapy.

## PRODUCT DATA



Human CD22 Protein (C-His) on SDS-PAGE under reducing condition (P+) and non-reducing condition (P-). The gel was stained for 1 hour with BlinkBlue (catalog 700102). The purity of this protein appears to be greater than 95%□

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