

PRODUCT INFORMATION



CD22 (aa 176-687) (human, recombinant)

Item No. 45285

Overview and Properties

Synonyms: B Cell Receptor CD22, B-lymphocyte Cell Adhesion Molecule, BL-CAM, Sialic Acid-binding Ig-like Lectin 2, Siglec-2, T Cell Surface Antigen Leu-14

Source: Active recombinant human C-terminal His-tagged CD22 (176-687) expressed in HEK293 cells

Amino Acids: 176-687

Uniprot No.: P20273

Molecular Weight: 58.5 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

Purity: ≥90% estimated by SDS-PAGE

Supplied in: Lyophilized from sterile PBS, pH 7.4

Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

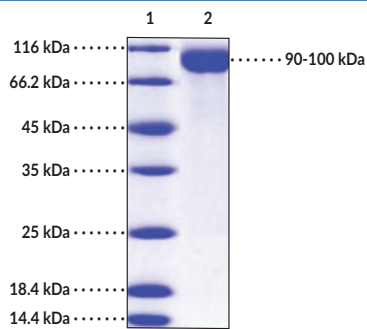
Protein Concentration: *batch specific* mg/ml

Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

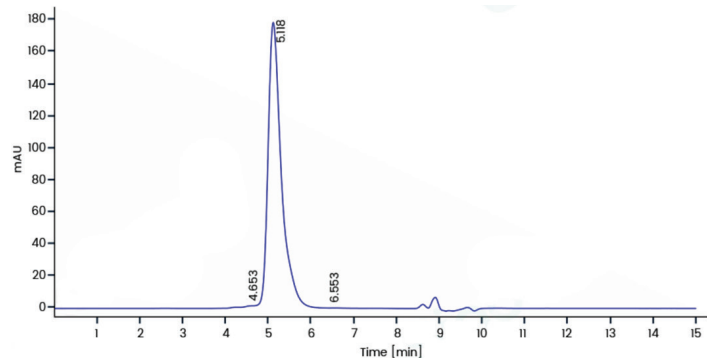
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: CD22

SDS-PAGE Analysis of CD22 (aa 176-687). This protein has a calculated molecular weight of 58.5 kDa. It has an apparent molecular weight of approximately 90-100 kDa by SDS-PAGE under reducing conditions due to glycosylation.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

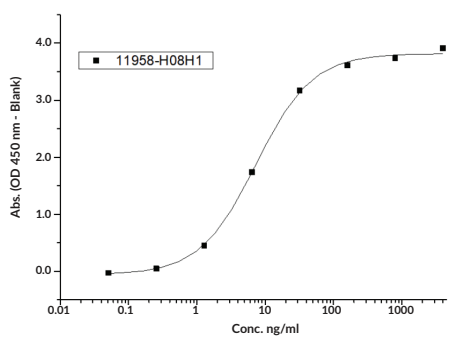
SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

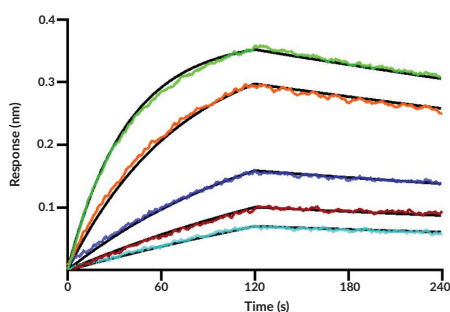
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Immobilized Anti-CD22 Antibody, Human IgG1 at 2 $\mu\text{g/ml}$ (100 $\mu\text{l/well}$) can bind CD22 (aa 176-687) (human, recombinant) (Item No. 45285), the EC_{50} is 8-25 ng/ml.



Loaded Anti-Human CD22 Antibody, Human IgG1 on AHC Biosensor, can bind CD22 (aa 176-687) (human, recombinant) (Item No. 45285) with an affinity constant of 5.92 nM as determined in BLI assay (Sartorius Octet RED384) (routinely tested).

Description

CD22 is a transmembrane receptor and member of the sialic acid-binding immunoglobulin-type (Ig-type) lectin (SIGLEC) family.^{1,2} It is composed of N-terminal extracellular Ig-like variable (IgV) and Ig-like constant 2 (IgC2) domains, a membrane-spanning region, and an intracellular immunoreceptor tyrosine-based inhibitory motif (ITIM) domain. CD22 has two isoforms formed *via* alternative splicing, CD22 β , which is the full-length form and contains six IgC2 domains, and CD22 α , which lacks the third and fourth IgC2 domains. It is expressed in the cytosol of premature B cells and on the cell surface of resting and activated B lymphocytes but is not expressed in differentiated B cells.³ CD22 is an inhibitory receptor activated by binding of α 2,6-linked sialic acid-containing molecules, such as glycoproteins, which stimulates phosphorylation of tyrosine in the ITIM domain, leading to recruitment of Src homology 2 domain-containing phosphatases (SHPs), including SHP-1, spleen tyrosine kinase (Syk), LYN, and PI3K.^{1,2} Knockout of *Cd22* decreases IgG1 titers in mice immunized with OVA/alum, and expression of human CD22 in *Cd22*^{-/-} mice rescues this phenotype.⁴ CD22 is overexpressed in cancer cells isolated from patients with hairy cell leukemia.³ Cayman's CD22 (aa 176-687) (human, recombinant) protein can be used for binding assay applications. This protein consists of 523 amino acids, has a calculated molecular weight of 58.5 kDa, and a predicted N-terminus of Trp176. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 90-100 kDa due to glycosylation.

References

1. Clark, E.A. and Giltiay, N.V. CD22: A regulator of innate and adaptive B cell responses and autoimmunity. *Front. Immunol.* **9**, 2235 (2018).
2. Tedder, T.F., Tuscano, J., Sato, S., *et al.* CD22, a B lymphocyte-specific adhesion molecule that regulates antigen receptor signaling. *Annu. Rev. Immunol.* **15**, 481-504 (1997).
3. Dörken, B., Moldenhauer, G., Pezzutto, A., *et al.* HD39 (B3), a B lineage-restricted antigen whose cell surface expression is limited to resting and activated human B lymphocytes. *J. Immunol.* **136**(12), 4470-4479 (1986).
4. Bednar, K.J., Shanina, E., Ballet, R., *et al.* Human CD22 inhibits murine B cell receptor activation in a human CD22 transgenic mouse model. *J. Immunol.* **199**(9), 3116-3128 (2017).

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1180 EAST ELLSWORTH RD
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