
Product Name: Soluble Human CD20 Extracellular Loop 2 (ECL2) Protein, Dimer, His Tag

Product Code: CSP-26403.S4-01

FOR RESEARCH USE ONLY (RUO)

Protein Name: CD20, Protein Dimer

Alternate Name(s): MS4A1, B1, Bp35, CD20, CVID5, LEU-16, MS4A2, S7, membrane spanning 4-domains A1, FMC7

Expression Host
HEK293T

Amino Acid Range
H157-Y184

Protein Construct

CD20 dimer protein contains a CD20 extracellular loop 2 (ECL2) (UniProt# P11836) fused with a proprietary scaffold cis-dimer motif followed by a His tag at the C-terminus. Expressed in HEK293T cell line.

SDS-Page Molecular Weight

23 kDa. The migration range of the dimer under non-reducing conditions is 25-40 kDa on SDS PAGE.

Purity

Greater than 90% dimer form as determined by SDS-PAGE under non-reducing condition

Shipping Conditions

Frozen Ice Packs

Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH 7.4 with 10% trehalose as a protectant

Stability & Storage

On receipt, store at -20 C or lower for long term storage.

This product is stable at:

-20 to -70 C for 12 months from date of receipt in lyophilized state.

-70 C for 3 months after reconstitution under sterile conditions.

Avoid repeated freeze-thaw cycles

Reconstitution of lyophilized product

For best performance, we strongly recommend you reconstitute the lyophilized product with deionized water to a stock solution of 500 µg/mL.

Solubilize for 20 minutes at room temperature with occasional gentle mixing. Avoid shaking or vortexing.

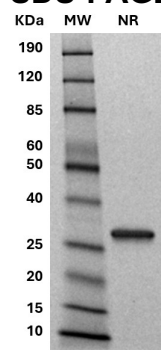
For 25µg product size:

Reconstitute with 50 µL sterile deionized water.

For 100µg product size:

Reconstitute with 200 µL sterile deionized water.

SDS-PAGE

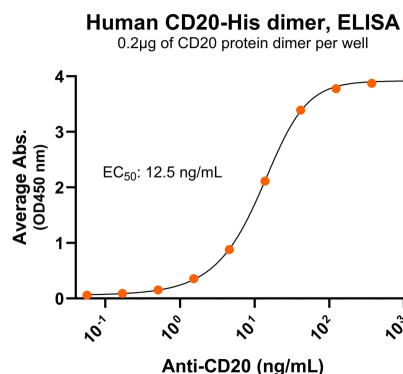


MW: Molecular Weight marker reduced condition

NR: CD20 dimer under non-reduced condition

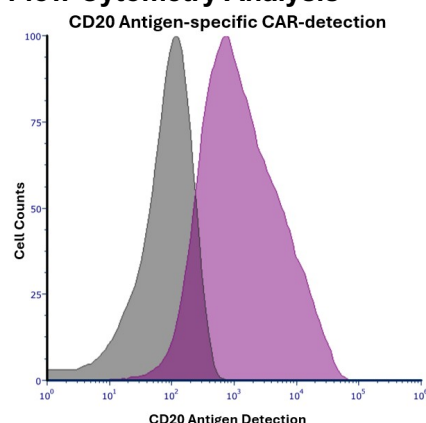
The migration range of the dimer under non-reducing conditions is 25-40 kDa on SDS PAGE.

Antibody Binding



Immobilized human CD20 Extracellular Loop 2 (ECL2) Protein, Dimer, His Tag (CSP-26403.S4-01) at 2 µg/mL (100 µL/well) can bind anti-human CD20 Rituximab biosimilar monoclonal antibody with half maximal effective concentration (EC50) range of 6.3-25 ng/mL (QC tested).

Flow Cytometry Analysis



Flow cytometry analysis of anti-CD20 rituximab CAR expression on HEK293T cells transiently transfected with CD20-specific rituximab scFv CAR construct. Transfected cells were stained with PE-conjugated anti-G4S linker antibody and Human CD20-ECL2 Protein Dimer His Tag (CSP-26403.S4-01) followed by APC-conjugated anti-His tag antibody detection. Thereafter, flow cytometry analyses were performed to detect surface expression of the anti-CD20 CAR. The purple curve represents CD20 CAR expressing cells detected by Human CD20-ECL2 Protein Dimer His Tag (CSP-26403.S4-01) while the black curve represents no CD20 protein staining. Mock transfected cells have no binding to either anti-G4S linker antibody or Human CD20-ECL2 Protein Dimer His Tag. The histogram shows that anti-CD20 CAR are detected by Human CD20-ECL2 Protein Dimer His Tag (CSP-26403.S4-01) on anti-G4S linker positive cells

Background

Human B-lymphocyte antigen CD20 (CD20), also known as MS4A1, is a transmembrane protein and a member of the membrane-spanning 4A gene family. CD20 is a 4-transmembrane B-cell surface protein. CD20 contains two extracellular loops (ECL1 and ECL2): a shorter ECL1 and a larger ECL2. The ECL2 is the dominant antibody targeting region (1, 2). It presents on the cell surface as homo-dimeric and homo-tetrameric oligomers where it physically interacts with major histocompatibility complex class II (MHCII), CD40, and B-cell receptor (BCR). CD20 is expressed on pre-B phase B cells but not terminally differentiated plasma cells. CD20 expression is concentrated in B-cell-derived cancers, especially mature B-cell non-Hodgkin lymphomas. It is generally a high-density, stable surface antigen in many B-cell lymphomas, although expression varies by tumor type and can decrease after CD20-directed treatment. CD20 is one of the most clinically validated B-cell therapeutic targets and has become an attractive target for autoimmune diseases. For CD20, antibody-based therapeutics have evolved from conventional monoclonal antibodies into engineered antibodies, bispecific T-cell engagers, antibody drug conjugates, and CAR T cell therapies.

1. Carlson AK, et al. Drugs Targeting CD20 in Multiple Sclerosis: Pharmacology, Efficacy, Safety, and Tolerability. *Drugs*. 2024; 84(3):285–304

2. Klein C, et al. Epitope interactions of monoclonal antibodies targeting CD20 and their relationship to functional properties. *mAbs*. 2013; 5:22–33.