



Synonym

MS4A1,CD20,MS4A-1

Source

Human CD20 Full Length Protein, His Tag(CD0-H52H3) is expressed from human 293 cells (HEK293). It contains AA Met 1 - Pro 297 (Accession # [P11836-1](#)).

Predicted N-terminus: Met 1

Molecular Characterization

CD20(Met 1 - Pro 297)
P11836-1 Poly-his

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 35.2 kDa. The protein migrates as 40 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>85% as determined by SDS-PAGE.

Formulation

This product is not suitable for cell based experiments due to cytotoxicity of DDM.

DDM and CHS are INDISPENSABLE to keep membrane protein soluble and active, under no circumstance should you remove DDM and CHS.

DDM/CHS buffer (DC-11) is sold separately and not included in protein, and please contact us if you need the buffer.

If glycerol is not compatible to your application, remove glycerol just before immediate experiment, and NEVER store glycerol-free protein solution.

Supplied as 0.2 µm filtered solution in 50 mM HEPES, 150 mM NaCl, DDM, CHS, pH7.5 with glycerol as protectant.

Contact us for customized product form or formulation.

Shipping

This product is supplied and shipped with dry ice, please inquire the shipping cost.

Storage

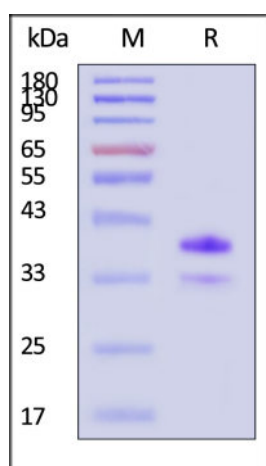
Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

- The product MUST be stored at -70°C or lower upon receipt;
- -70°C for 3 months under sterile conditions.

**The DDM/CHS buffer (Cat. No. [DC-11](#)) is sold separately and not included in protein, you can follow [this link](#) for product information.

SDS-PAGE

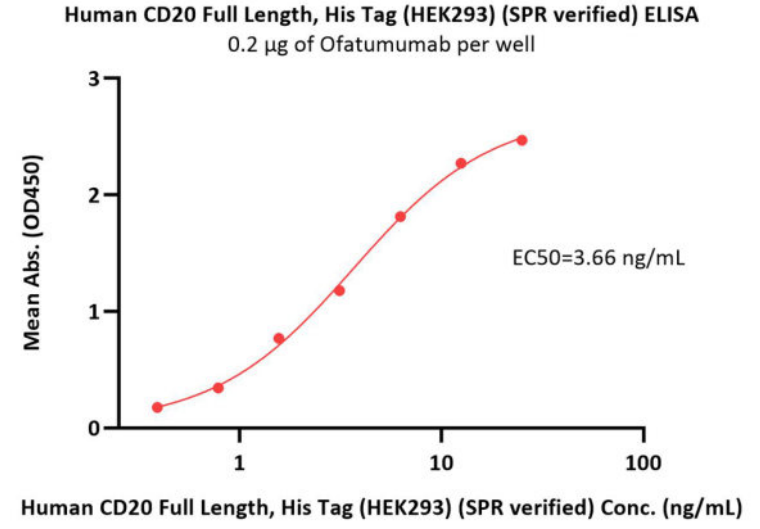
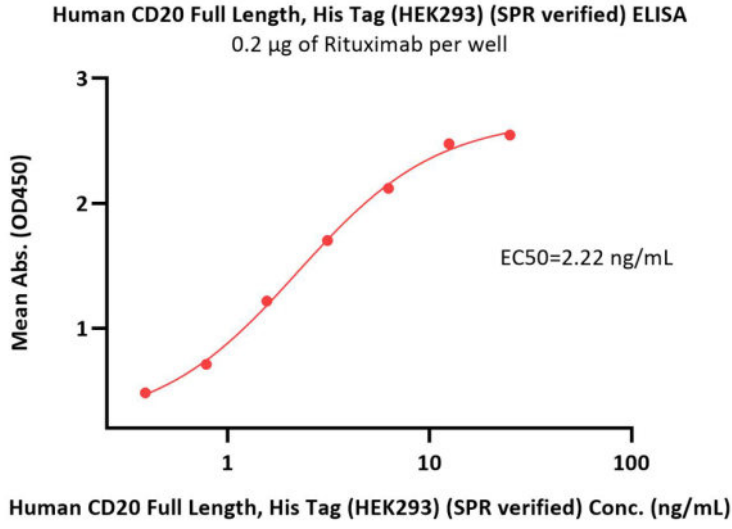


Human CD20 Full Length Protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 85% (With [Star Ribbon Pre-stained Protein Marker](#)).

Bioactivity-ELISA

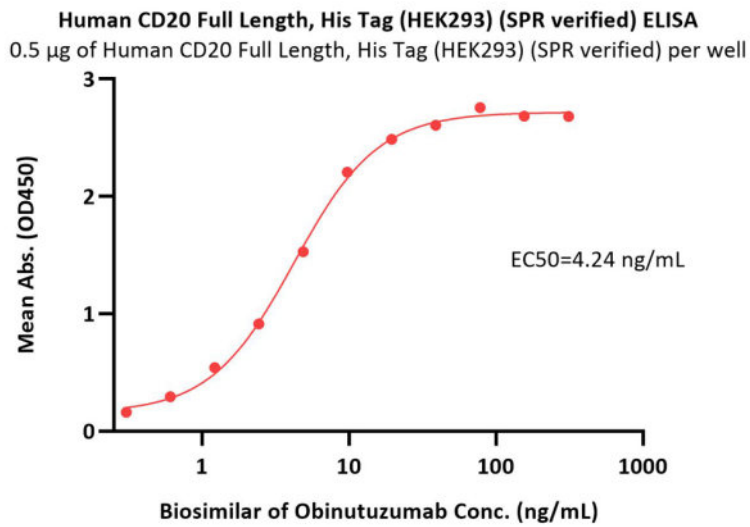
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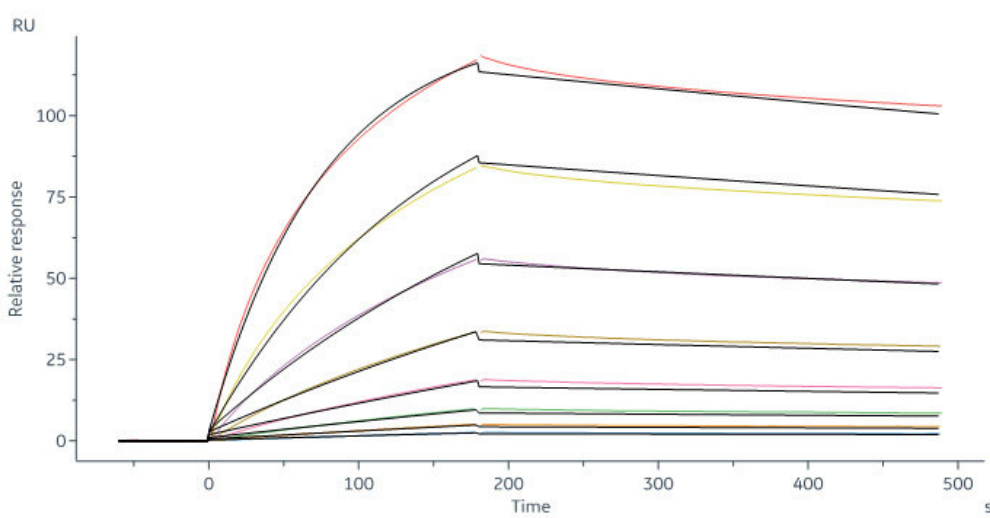
Immobilized Rituximab at 2 µg/mL (100 µL/well) can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with a linear range of 0.4-3 ng/mL (in presence of DDM and CHS) (QC tested).

Immobilized Ofatumumab at 2 µg/mL (100 µL/well) can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with a linear range of 0.4-6 ng/mL (in presence of DDM and CHS) (QC tested).

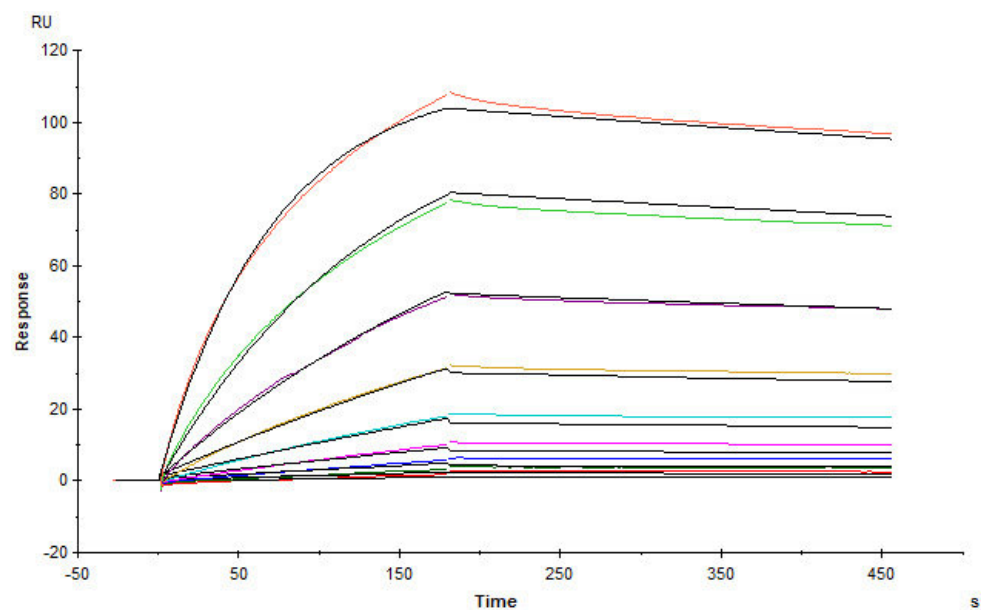


Immobilized Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) at 5 µg/mL (100 µL/well) can bind Biosimilar of Obinutuzumab with a linear range of 0.3-5 ng/mL (Routinely tested).

Bioactivity-SPR



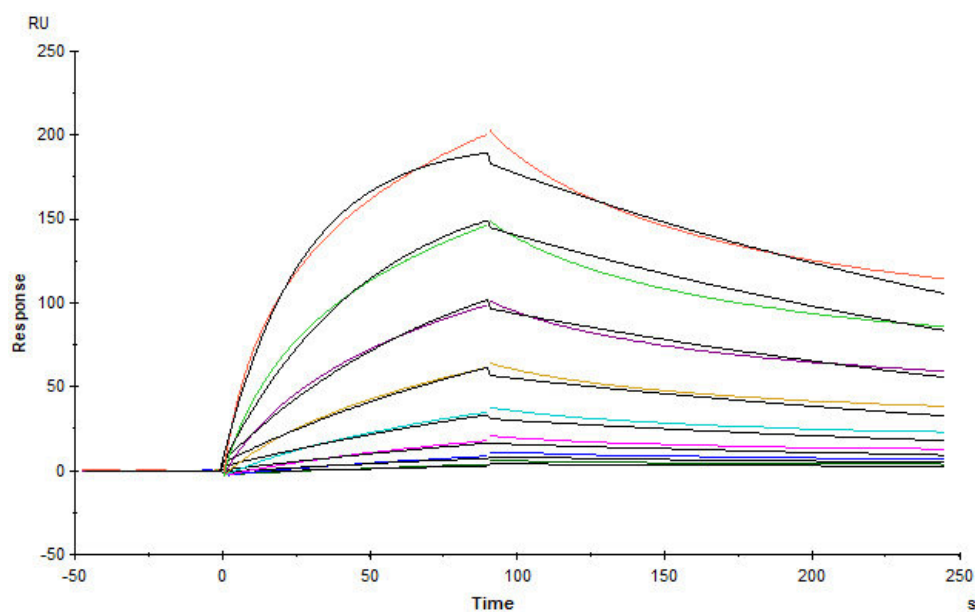
MabThera® (Rituximab) captured on CM5 chip via Anti-human IgG Fc antibodies surface can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 6.21 nM as determined in a SPR assay (in presence of DDM and CHS) (Biacore 8K) (QC tested).



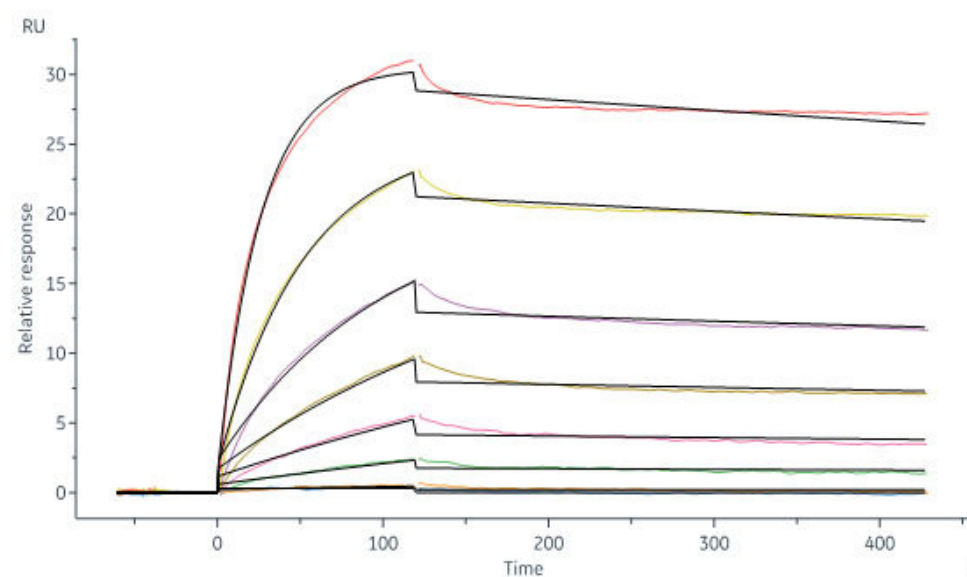
Ofatumumab captured on CM5 chip via Anti-human IgG Fc antibodies surface can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 9.63 nM as determined in a SPR assay (in presence of DDM and CHS) (Biacore 8K) (QC tested).

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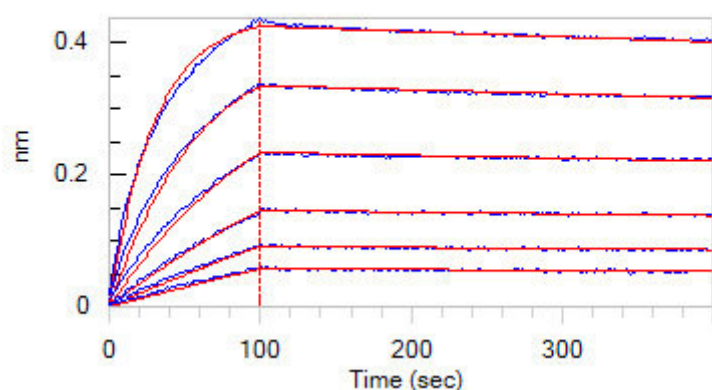


Biosimilar of Obinutuzumab captured on CM5 chip via anti-human IgG Fc antibody can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 21.5 nM as determined in a SPR assay (in presence of DDM and CHS) (Biacore T200) (Routinely tested).

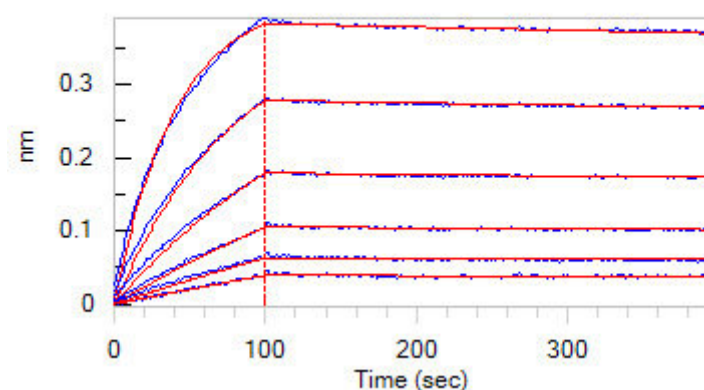


Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) captured on CM5 chip via Anti-His antibody can bind MabThera® (Rituximab) with an affinity constant of 0.921 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

Bioactivity-BLI



Loaded Rituximab on AHC Biosensor, can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 1.14 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Ofatumumab (Human IgG1) on AHC Biosensor, can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 0.968 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Background

B-lymphocyte antigen CD20 is also known as B-lymphocyte surface antigen B1, Leukocyte surface antigen Leu-16, Membrane-spanning 4-domains subfamily A member 1 and MS4A1, is an activated-glycosylated phosphoprotein expressed on the surface of all B-cells beginning at the pro-B phase (CD45R+, CD117+) and progressively increasing in concentration until maturity. CD20 is expressed on all stages of B cell development except the first and last; it is present from late pro-B cells through memory cells, but not on either early pro-B cells or plasma blasts and plasma cells. It is found on B-cell lymphomas, hairy cell leukemia, B-cell chronic lymphocytic leukemia, and melanoma cancer stem cells. The protein has no known natural ligand and its function is to enable optimal B-cell immune response, specifically against T-independent antigens. It is suspected that it acts as a calcium channel in the cell membrane. CD20 / MS4A1 is the target of the monoclonal antibodies (mAb) rituximab, Ibritumomab tiuxetan, and tositumomab, which are all active agents in the treatment of all B cell lymphomas and leukemias. Defects in CD20 / MS4A1 are the cause of immunodeficiency common variable type 5 (CVID5); also called antibody deficiency due to CD20 defect. CVID5 is a primary immunodeficiency characterized by antibody deficiency, hypogammaglobulinemia, recurrent bacterial infections and an inability to mount an antibody response to antigen.

Clinical and Translational Updates

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