



### 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

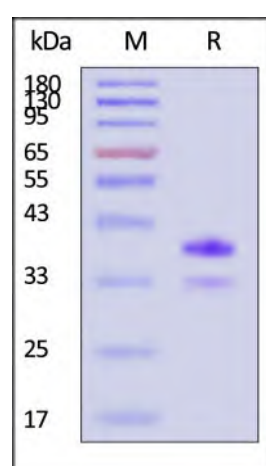
*Please avoid repeated freeze-thaw cycles.*

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

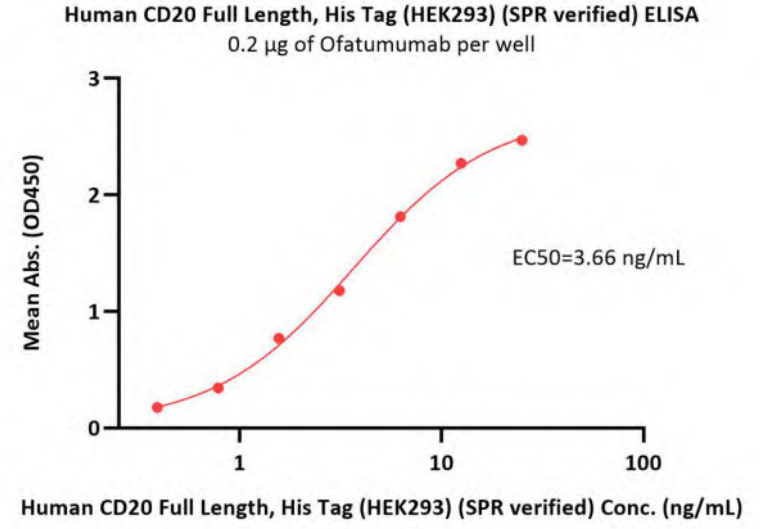
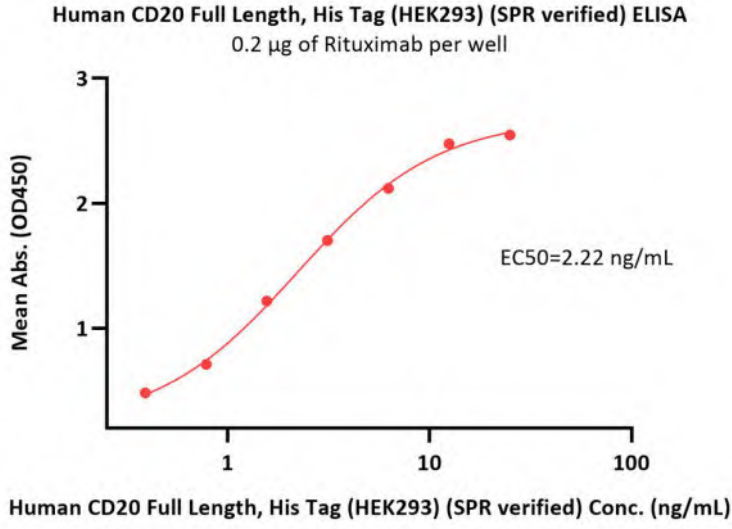


Human CD20 Full Length Protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 85% (With [Star Ribbon Pre-stained Protein Marker](#)).

### Bioactivity-ELISA

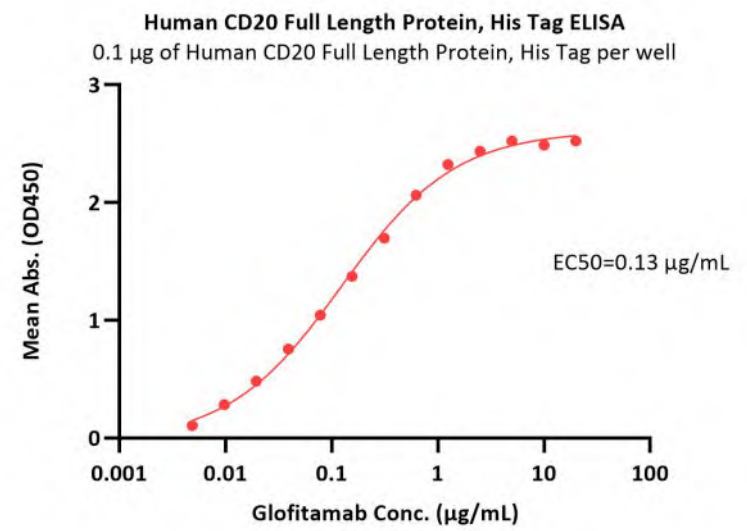
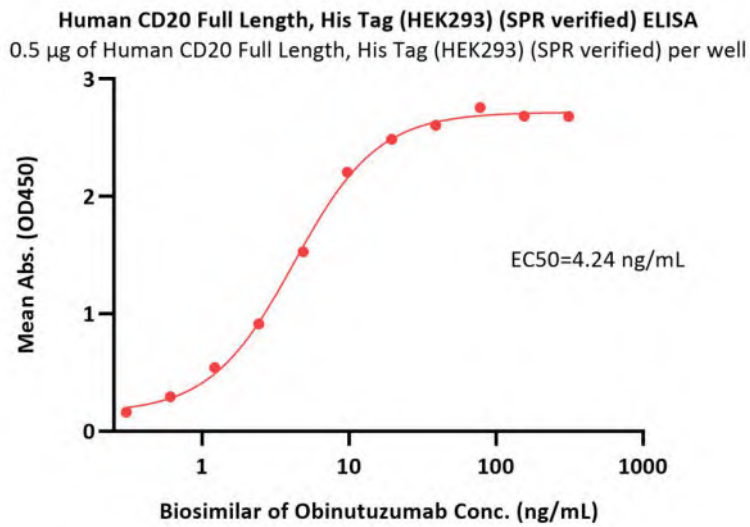
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Immobilized Rituximab at 2 µg/mL (100 µL/well) can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with a linear range of 0.4-3 ng/mL (in presence of DDM and CHS) (QC tested).

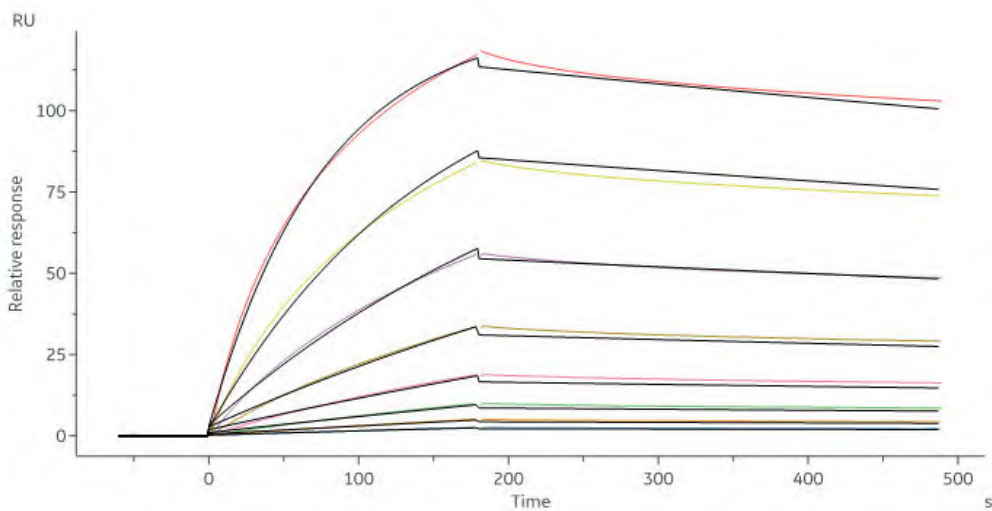
Immobilized Ofatumumab at 2 µg/mL (100 µL/well) can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with a linear range of 0.4-6 ng/mL (in presence of DDM and CHS) (QC tested).



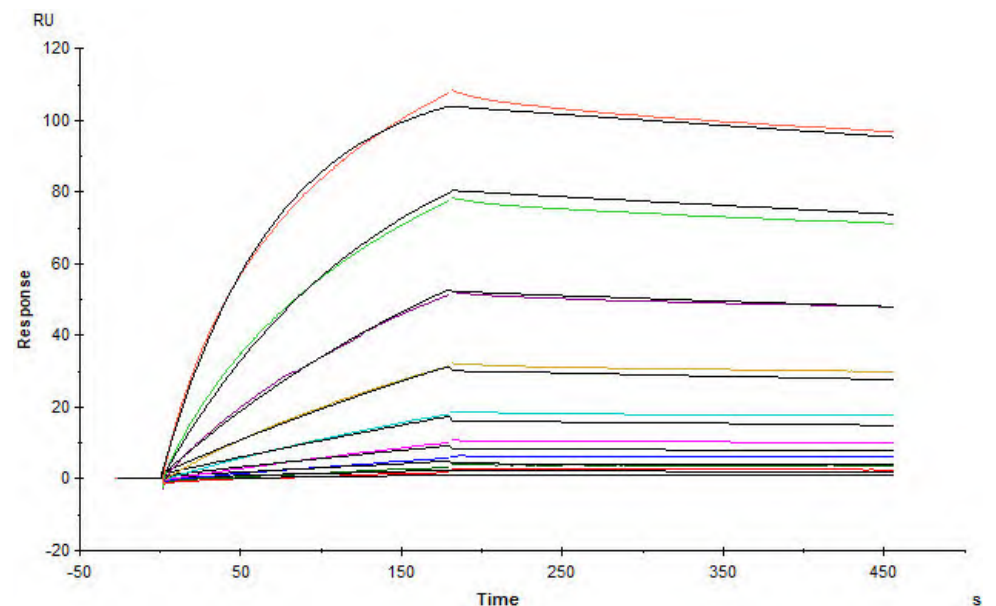
Immobilized Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) at 5 µg/mL (100 µL/well) can bind Biosimilar of Obinutuzumab with a linear range of 0.3-5 ng/mL (Routinely tested).

Immobilized Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) at 1 µg/mL, add Glofitamab and then add Biotinylated Human CD3E&CD3G Heterodimer Protein, His,Avitag&Tag Free (Cat. No. CDG-H82W3) at 1 µg/mL. Detection was performed using HRP-conjugated Streptavidin (Acro, Cat. No. STN-NH913) (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.



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)

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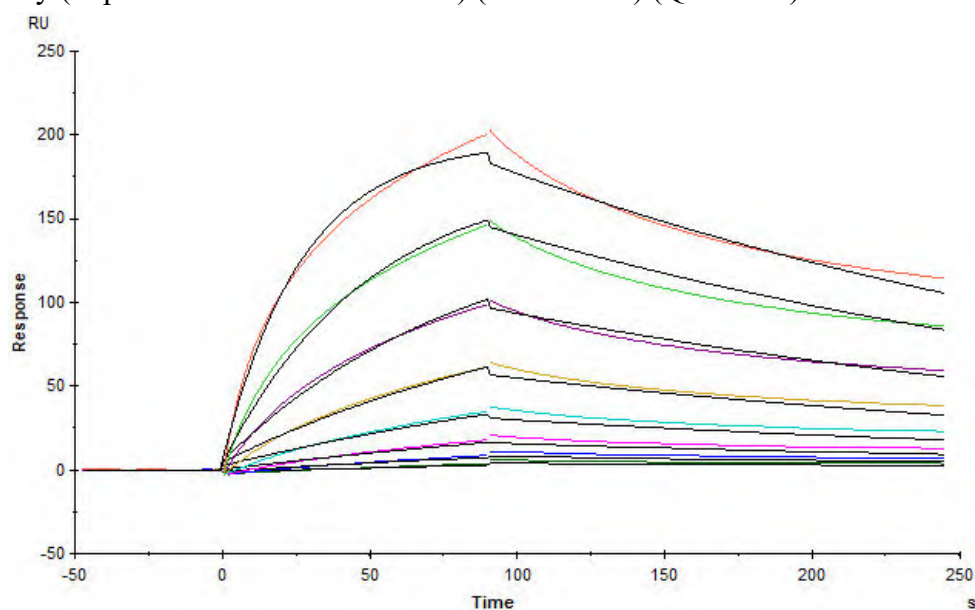
# Human CD20 / MS4A1 Full Length Protein, His Tag (Detergent) (SPR verified)

Catalog # CD0-H52H3



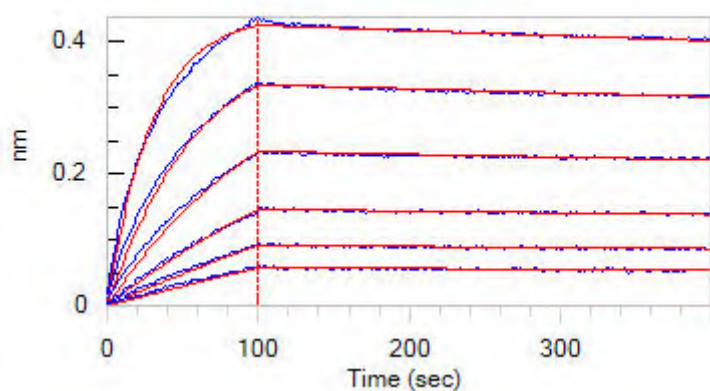
BIOSYSTEMS  
**Acro**

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).



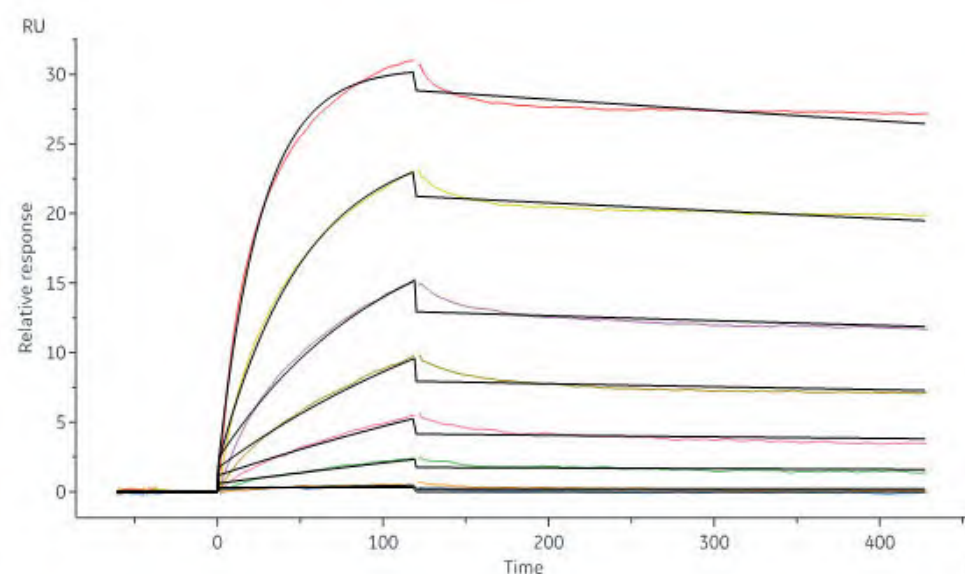
Biosimilar of Obinutuzumab captured on CM5 chip via anti-human IgG Fc antibody can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 21.5 nM as determined in a SPR assay (in presence of DDM and CHS) (Biacore T200) (Routinely tested).

## Bioactivity-BLI

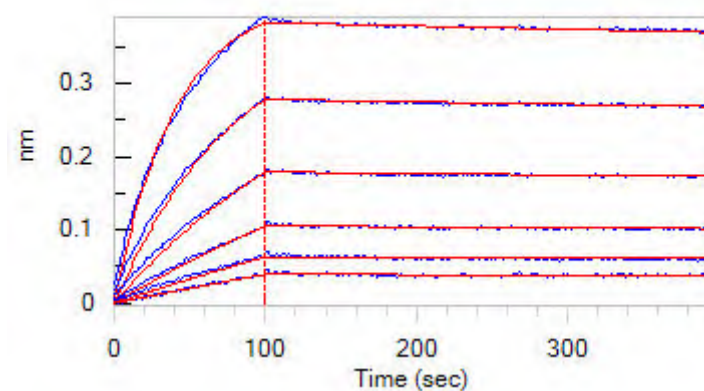


Loaded Rituximab on AHC Biosensor, can bind Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) with an affinity constant of 1.14 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

with an affinity constant of 9.63 nM as determined in a SPR assay (in presence of DDM and CHS) (Biacore 8K) (QC 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).



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.

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