

**Synonym**

FCGR3A,CD16A,FCG3,FCGR3,IGFR3

**Source**

Human CD16a (V176), His Tag(CD8-H52H4) is expressed from human 293 cells (HEK293). It contains AA Gly 17 - Gln 208 (Accession # [P08637-1](#) (F176V)).

Predicted N-terminus: Gly 17

**Molecular Characterization**

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

The protein has a calculated MW of 23.7 kDa. The protein migrates as 40-60 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  $\mu$ g by the LAL method / rFC method.

**Purity**

>95% as determined by SDS-PAGE.

>95% as determined by SEC-MALS.

**Formulation**

Lyophilized from 0.22  $\mu$ m filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

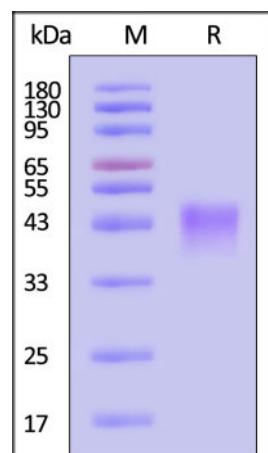
**Storage**

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

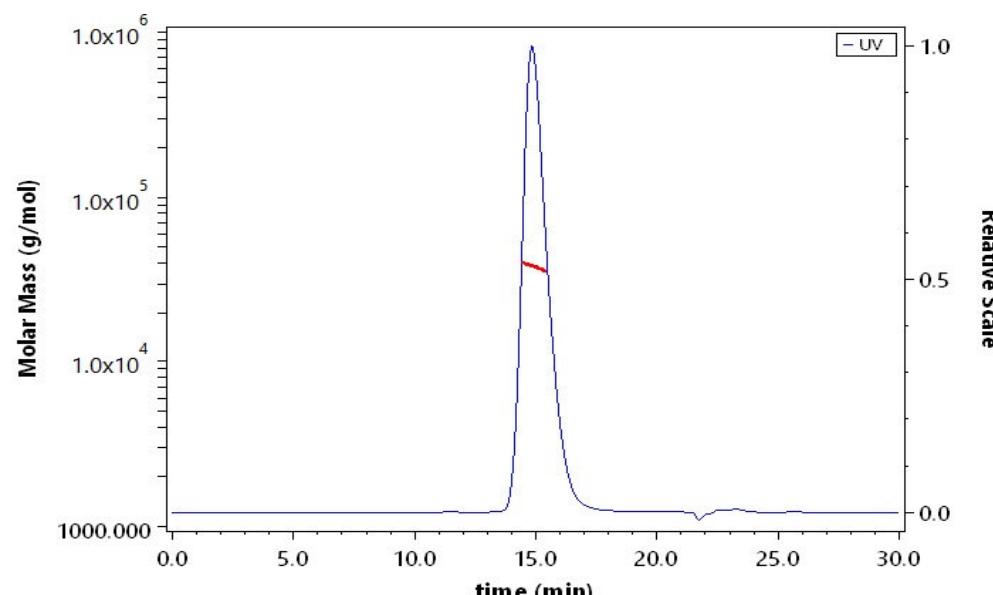
*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 12 months under sterile conditions after reconstitution.

**SDS-PAGE**

Human CD16a (V176), His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With [Star Ribbon Pre-stained Protein Marker](#)).

**SEC-MALS**

The purity of Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) is more than 95% and the molecular weight of this protein is around 35-45 kDa verified by SEC-MALS.

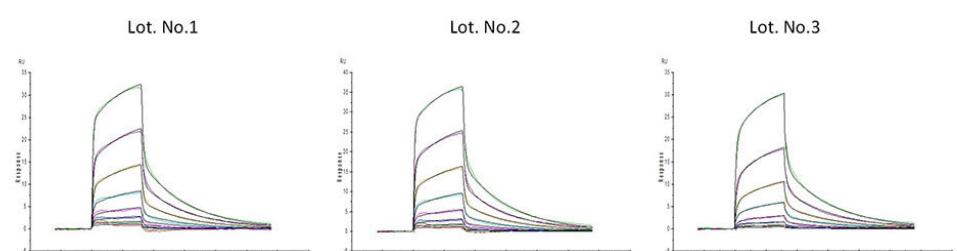
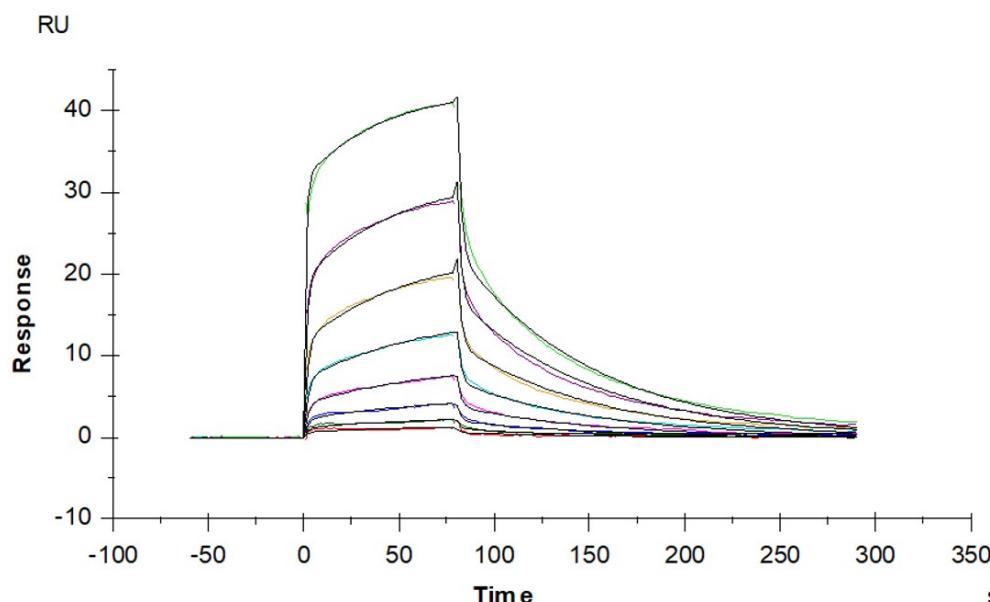
[Report](#)

**Bioactivity-SPR**

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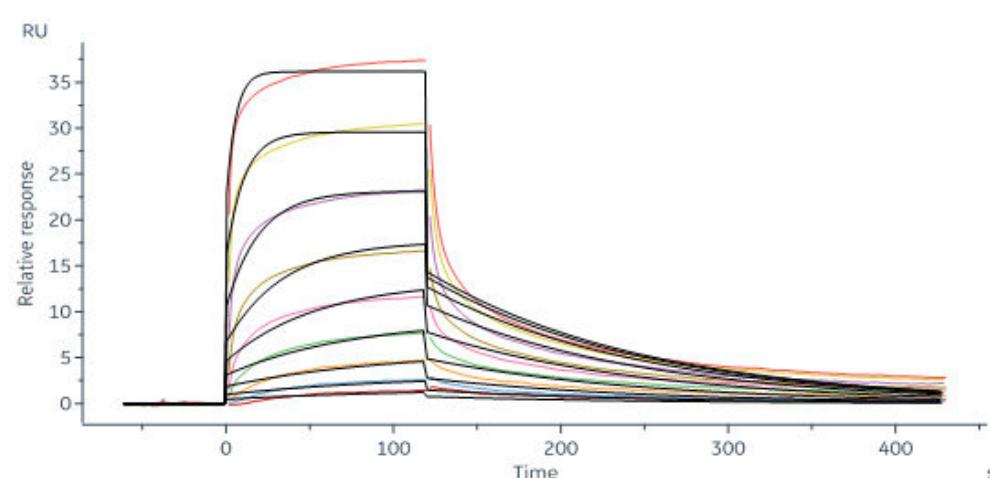


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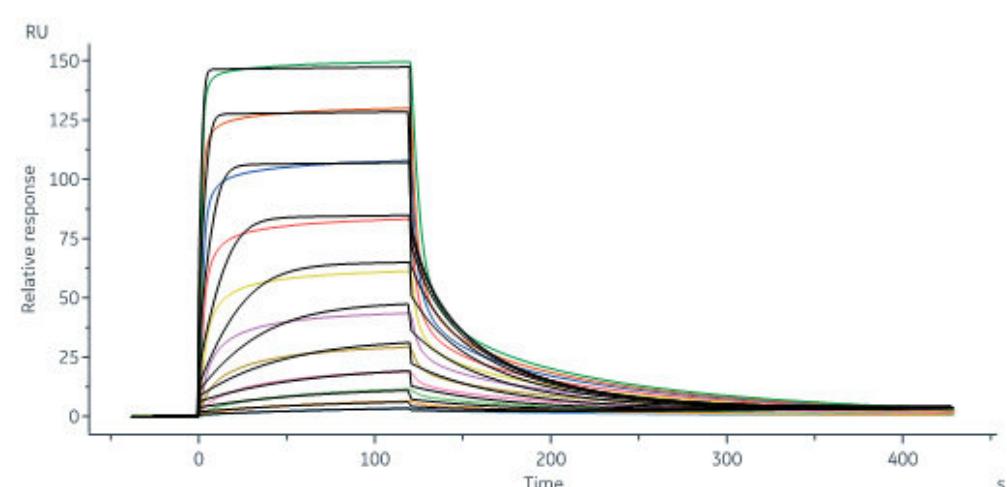


Ligand Name	Ligand Lot. No.	Analyte	ka1 (1/Ms)	Kd1 (1/s)	ka2 (1/Ms)	kd2 (1/s)	KD (M)
Human CD16a (V176), His Tag (Cat. No. CD8-H52H4)	Lot. No.1	Monoclonal Anti-Her2 Antibody, Human IgG1	2.35E+05	4.03E-01	1.48E-02	1.39E-02	8.29E-07
	Lot. No.2		2.32E+05	3.66E-01	1.46E-02	1.37E-02	7.63E-07
	Lot. No.3		1.72E+05	2.19E-01	2.33E-02	1.39E-02	4.77E-07

Immobilized Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) on CM5 Chip via anti-His antibody, can bind Monoclonal Anti-Her2 Antibody, Human IgG1 (Cat. No. HE2-M598) with an affinity constant of  $0.441\mu\text{M}$  as determined in SPR assay (Biacore T200) (QC tested).

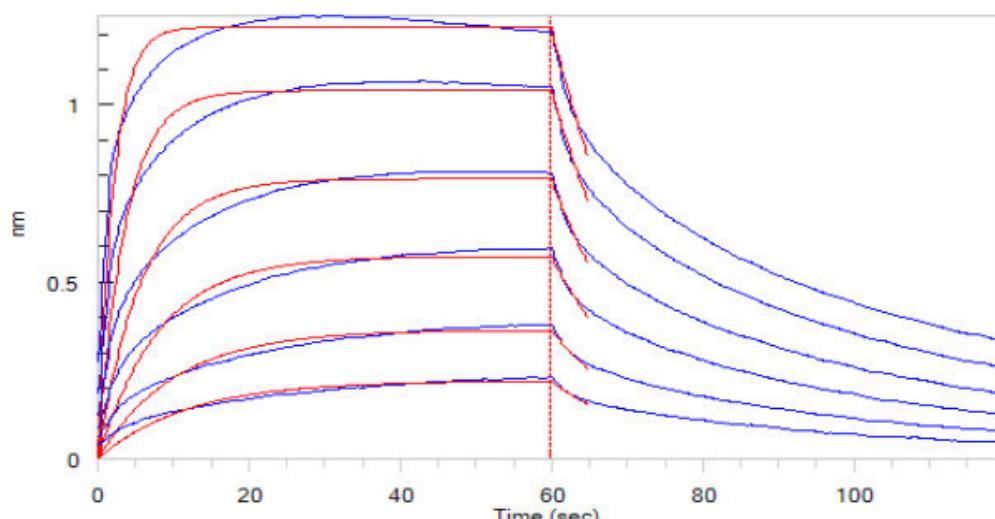


Herceptin captured on Protein A Chip can bind Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) with an affinity constant of  $0.124\mu\text{M}$  as determined in SPR assay (Biacore 8K) (Routinely tested).

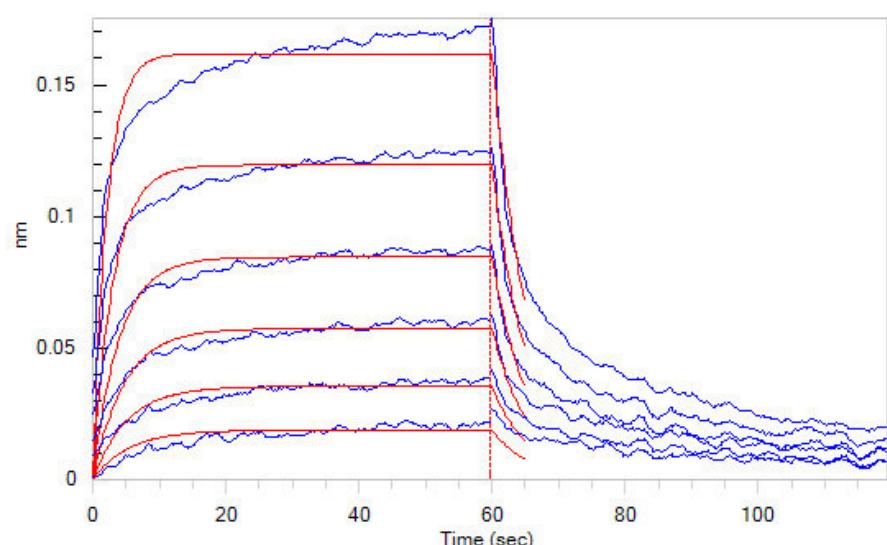


Herceptin immobilized on CM5 Chip can bind Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) with an affinity constant of  $0.215\mu\text{M}$  as determined in SPR assay (Biacore 8K) (Routinely tested).

### Bioactivity-BLI



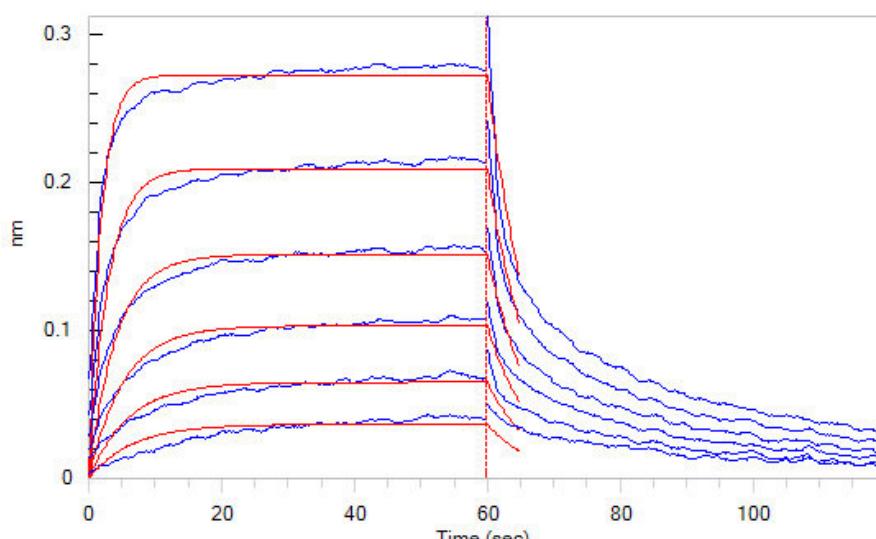
Loaded Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) on HIS1K Biosensor, can bind Herceptin with an affinity constant of  $0.447\mu\text{M}$  as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Herceptin on Protein A Biosensor, can bind Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) with an affinity constant of  $0.37\mu\text{M}$  as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

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Loaded Herceptin on FAB2G Biosensor, can bind Human CD16a (V176), His Tag (Cat. No. CD8-H52H4) with an affinity constant of 0.31  $\mu$ M as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

## Background

CD16 is a low affinity Fc receptor, and has been identified as Fc receptors Fc $\gamma$ RIIIa (CD16a) and Fc $\gamma$ RIIIb (CD16b). These receptors bind to the Fc portion of IgG antibodies. CD16 encoded by two different highly homologous genes in a cell type-specific manner. CD16 is found on the surface of natural killer cells, neutrophil polymorphonuclear leukocytes, monocytes and macrophages.

CD16a antigen is also known as Low affinity immunoglobulin gamma Fc region receptor III-A, Fc-gamma RIII-alpha. CD16b is a low-affinity, GPI-linked receptor expressed by neutrophils and eosinophils, whereas CD16a is an intermediate affinity polypeptide-anchored transmembrane glycoprotein expressed natural killer cells, macrophages, subpopulation of T-cells, immature thymocytes and placental trophoblasts. CD16a is involved in phagocytosis, secretion of enzymes and inflammatory mediators, antibody-dependent cytotoxicity and clearance of immune complexes. Aberrant expression or mutations of CD16a is implicated in susceptibility to recurrent viral infections, systemic lupus erythematosus, and alloimmune neonatal neutropenia.

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