



SB Sino Biological

FcγRs & FcRn
蛋白产品手册

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产品优势/列表

产品优势







	实际应用场景验证	以药物研发场景为依据，开发精准验证方案(提供精准技术支持)
	完美的批间稳定性	严格工艺验证，完善的文件和培训体系
	更接近天然蛋白构象	HEK293细胞表达
	高纯度	≥ 95% (SDS-PAGE、SEC-HPLC、MALS检测)
	Biotin 定点标记蛋白 —AVI tag	1+1>2，兼顾数据的稳定与操作的体验

产品列表(部分)

分子	货号	种属	标签	纯度验证	SPR/BLI 验证
FcγRI / CD64	10256-H08H	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
FcγRIIA / CD32a (H167)	10374-H08C1	Human	His	SDS-PAGE,	BLI
	10374-H08H1	Human	His	SDS-PAGE, HPLC	BLI, SPR
	10374-H27H1-B	Human	His & AVI	SDS-PAGE, HPLC, MALS	BLI
	10374-H27H2-B	Human	His & AVI	SDS-PAGE, HPLC	BLI
FcγRIIA / CD32a (R167)	10374-H08H	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	10374-H27H-B	Human	His & AVI	SDS-PAGE, HPLC, MALS	BLI
FcγRIIB / CD32b	50030-M08H	Mouse	His	SDS-PAGE, HPLC, MALS	BLI
	50030-M27H-B	Mouse	His & AVI	SDS-PAGE, HPLC	BLI
	90014-C27H-B	Cynomolgus	His & AVI	SDS-PAGE,	BLI
	91023-K49H-B	Rhesus	His & AVI	SDS-PAGE, HPLC	BLI
FcγRIIB/C / CD32b/c	10259-H27H-B	Human	His & AVI	SDS-PAGE, HPLC	BLI
FcγRIII / CD16	50326-M08H	Mouse	His	SDS-PAGE, HPLC	BLI
	50326-M27H-B	Mouse	His & AVI	SDS-PAGE, HPLC, MALS	BLI
FcγRIIIA / CD16a (F176)	10389-H08H	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	10389-H27H	Human	His & AVI	SDS-PAGE, HPLC	BLI
	10389-H27H-B	Human	His & AVI	SDS-PAGE, HPLC, MALS	BLI
FcγRIIIA / CD16a (V176)	10389-H08H1	Human	His	SDS-PAGE, HPLC	BLI, SPR
	10389-H27H1-B	Human	His & AVI	SDS-PAGE, HPLC	BLI
FcγRIIIB / CD16b (NA1)	11046-H08H1	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	11046-H27H1-B	Human	His & AVI	SDS-PAGE, HPLC, MALS	BLI
FcγRIIIB / CD16b (NA2)	11046-H08H	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	11046-H27H-B	Human	His & AVI	SDS-PAGE, HPLC	BLI
FcγRIV / CD16-2	50036-M08H	Mouse	His	SDS-PAGE,	BLI
	50036-M27H	Mouse	His & AVI	SDS-PAGE,	BLI
	50036-M27H-B	Mouse	His & AVI	SDS-PAGE,	BLI
FcRn (FCGRT & B2M)	CT009-H08H	Human	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	CT009-H08H-B	Human	His	SDS-PAGE,	BLI
	CT029-M08H	Mouse	His	SDS-PAGE, HPLC, MALS	BLI, SPR
	CT071-H27H-B	Human	His & AVI	SDS-PAGE, HPLC, MALS	BLI

Human FcγRs

人体内有两类FcγR，一类为激活受体，包含 FcγRI (CD64)、FcγRIIA (CD32a)、FcγRIIC (CD32c)和 FcγRIIIA (CD16a)；一类为抑制受体，FcγRIIB (CD32b)是唯一发现的Fc抑制受体。FcγRs主要在天然免疫细胞表达，如APC、NK等（见下表）。

Human IgG receptors						
Name	FcγRI	FcγRIIA	FcγRIIB	FcγRIIC [‡]	FcγRIIIA	FcγRIIIB
CD	CD64	CD32a	CD32b	CD32c	CD16a	CD16b
						
B cell	-	-	+	-	-	-
T cell	-	-	-	-	-	-
NK cell	-	-	- [#]	+ [‡]	+	-
Mono/Macro	+	+	+/-	+ [‡]	+	-
Neutrophil	(+)	+	+/-	+ [‡]	-	+
Dendritic Cell [§]	+	+	+	-	-	-
Basophil	-	+	+	-	-	+/-
Mast cell	(+)	+	-	-	-	-
Eosinophil	-	+	-	-	-	-
platelet	-	+	-	-	-	-
Endothelium	-	-	-	-	-	-

. + indicates expression; (+), inducible expression; ±, very low percentages or rare subsets express the receptor; -, no expression; [§]Refer to the review by Guilliams et al. for specific expression on human DC subtypes. [‡]In Fcgr2c-ORF persons. [#] Detectable and functional expression in non-conventional Fcgr2c-Stop persons.

FcγR在抗体药治疗中的重要作用

为了保证临床疗效和安全性，抗体药需在临床前进行全面的评估。除亲和力和抗原特异性外，还包括ADCC、ADCP及CDC等效应功能。FcγRs在ADCC、ADCP等效应功能上起到了关键作用，如FcγRIIIA (CD16a)激活NK介导的ADCC，FcγRIIA (CD32a)和FcγRIIIA激活Mφ介导的ADCP (图1)

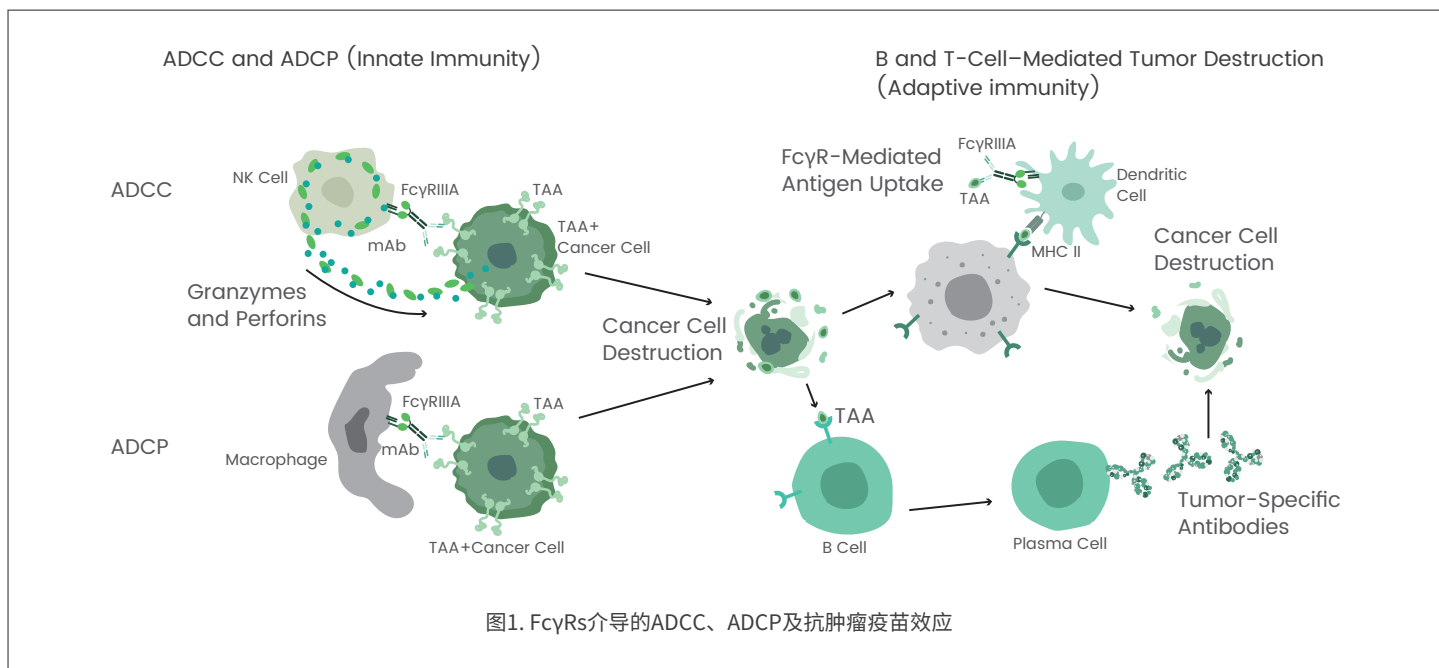


表2. FcγRs的种类及特点

Name	FcγRI/CD64	FcγRIIA/CD32a	FcγRIIB/CD32b	FcγRIIC/CD32c	FcγRIIIA/CD16a	FcγRIIIB/CD16b
Structure ¹⁾						
Function ¹⁾	Activating	Activating	Inhibitory	Activating	Activating	Activating
Affinity ¹⁾	High	Low	Low	Low	Low	Low
Effect of Antibody Binding	ADCP, cytokine release	ADCC, ADCP, vaccinal effect	Inhibits ADCC, ADCP, B cell activation	Enhances ADCC, ADCP, B cell activation	ADCC, ADCP	Decoy receptor that inhibits ADCP

FcγR多态性

部分FcγR具有基因多态性，如FcγRIIA和FcγRIIIA，其中FcγRIIIA-176V纯合子约占全球人口12%；44-64岁白人和黑人中FcγRIIA-167H纯合子约占27%，而亚洲人约占60%。不同变体与IgG的亲合力具有差别，继而影响ADCC等抗肿瘤效力（表3）。

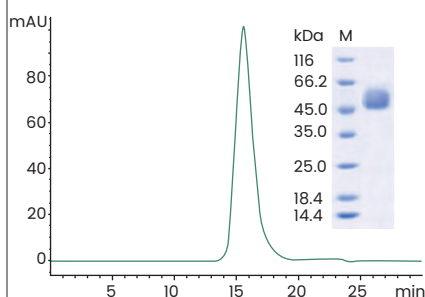
表3. FcγR多态性及效果

Receptor	Variant	Effect
FcγRIIA	H/R ₁₆₇	H ₁₆₇ 变体较 R ₁₆₇ 变体，与IgG1/IgG2的亲合力高，免疫调理作用增强
FcγRIIIA	V/F ₁₇₆	V ₁₇₆ 变体较 F ₁₇₆ 变体，与IgG1/IgG2/IgG3的亲合力高，激活细胞的效果更强
FcγRIIIB	NA1/NA2	NA1 变体较 NA2 变体，IgG介导的吞噬作用增强

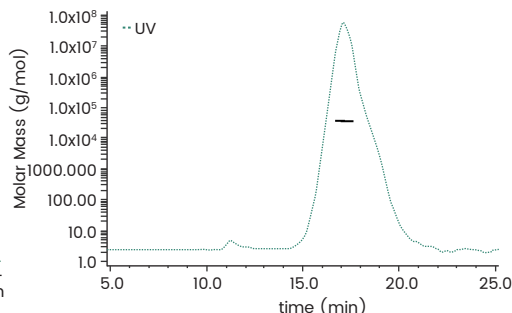
Human FcγRs 产品数据展示

Human FcγRI / CD64 protein

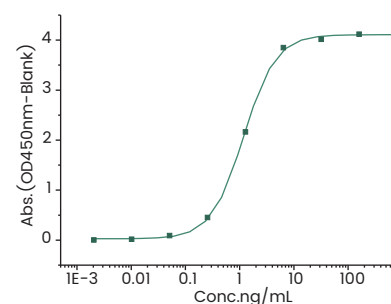
10256-H08H



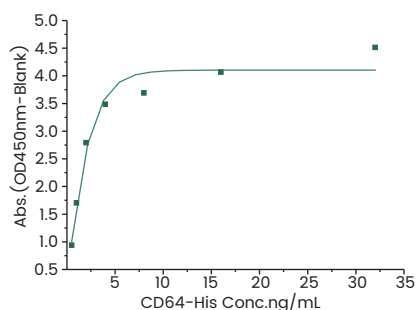
≥ 90% as determined by SDS-PAGE & SEC-HPLC



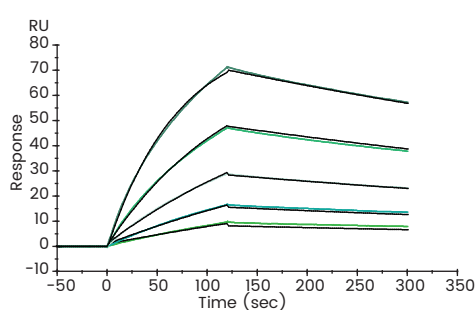
≥ 95% as determined by SEC-MALS (MW ~38-52 kDa)



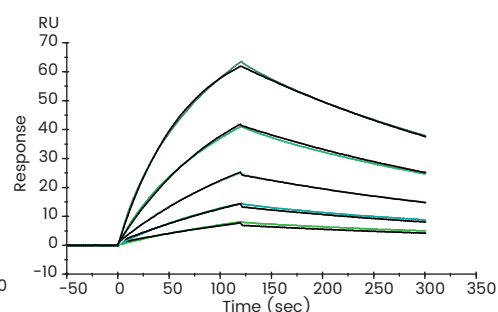
Immobilized Rituximab at 1 μg/mL can bind Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H), the EC₅₀ is 0.6-2.0 ng/mL.



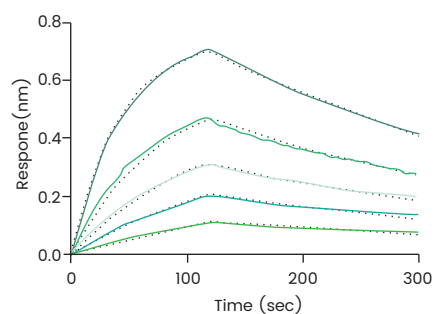
Immobilized Rituximab at 1 μg/mL can bind Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H), with a linear range of 0.5-4.0 ng/mL.



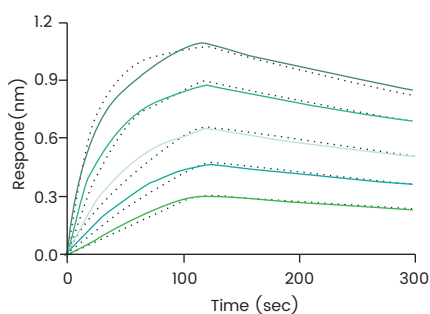
Captured Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H) on Anti-His Chip can bind Bevacizumab (IgG1) with an affinity constant of 5.5 nM as determined in an SPR assay (Biacore T200).



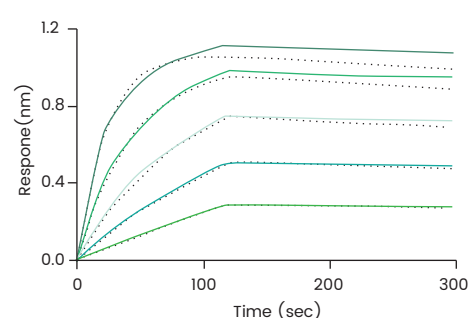
Captured Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H) on Anti-His Chip can bind Nivolumab (IgG4) with an affinity constant of 13.6 nM as determined in an SPR assay (Biacore T200).



Loaded Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H) on His1K Biosensor, can bind Nivolumab (IgG4) with an affinity constant of 8.5 nM as determined in a BLI assay (ForteBio Octet Red384).



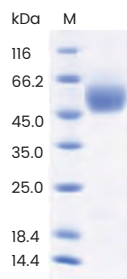
Loaded Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H) on His1K Biosensor, can bind Bevacizumab (IgG1) with an affinity constant of 4.7 nM as determined in a BLI assay (ForteBio Octet Red384).



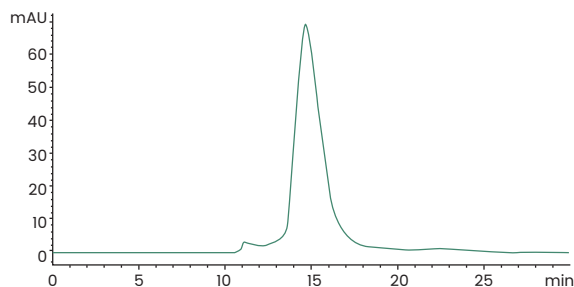
Loaded Rituximab (IgG1) on ProA Biosensor, can bind Human FcγRI / CD64 recombinant protein (Cat. 10256-H08H) with an affinity constant of 0.38 nM as determined in a BLI assay (ForteBio Octet Red384).

Biotinylated Human FcγRI / CD64 protein

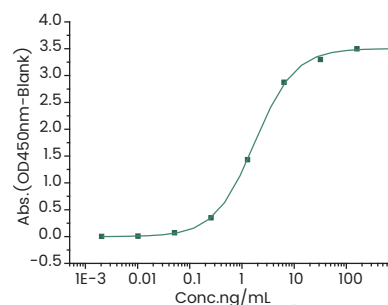
10256-H27H-B



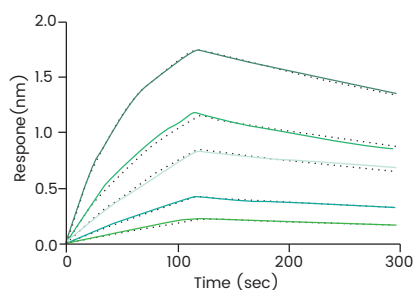
> 95 % as determined by SDS-PAGE



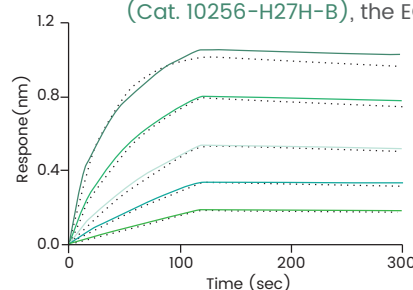
> 90 % as determined by SEC-HPLC



Immobilized Rituximab (IgG1) at 1 μg/mL can bind Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) (Cat. 10256-H27H-B), the EC_{50} is 1-3 ng/mL.



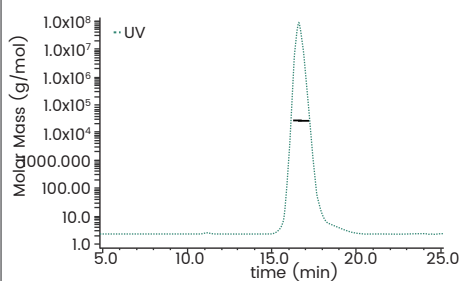
Loaded Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) (Cat. 10256-H27H-B) on SA Biosensor, can bind Nivolumab (IgG4) with an affinity constant of 6.6 nM as determined in a BLI assay (ForteBio Octet Red384).



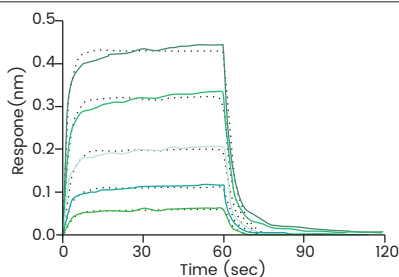
Loaded Rituximab (IgG1) on ProA Biosensor, can bind Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) (Cat. 10256-H27H-B) with an affinity constant of 0.54 nM as determined in a BLI assay (ForteBio Octet Red384).

Human FcγRIIA / CD32a (R167) protein

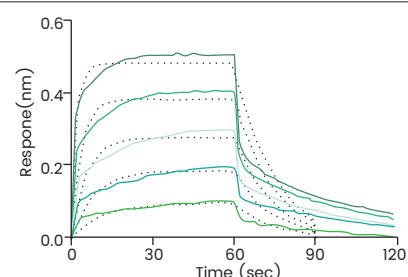
10374-H08H



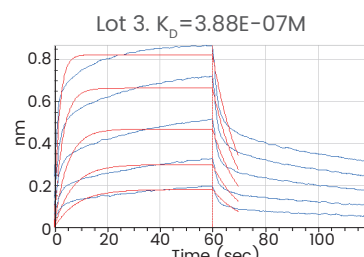
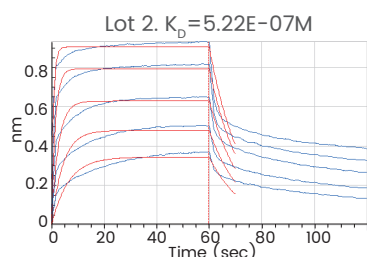
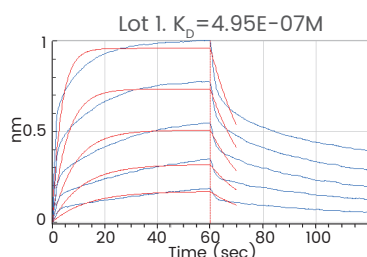
≥ 95% as determined by SEC-MALS (MW ~23-32 kDa)



Loaded Rituximab (IgG1) on ProA Biosensor, can bind Human FcγRIIA / CD32a (R167) recombinant protein (Cat. 10374-H08H) with an affinity constant of 2.3 μM as determined in a BLI assay (ForteBio Octet Red384).



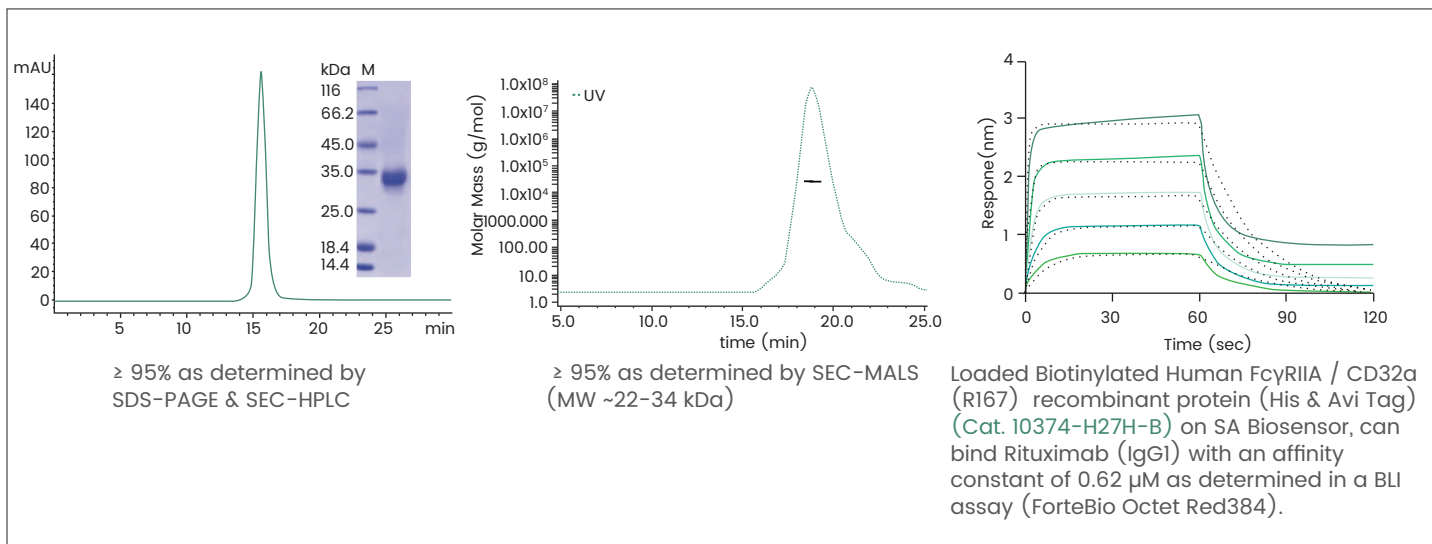
Loaded Human FcγRIIA / CD32a (R167) recombinant protein (Cat. 10374-H08H) on His1K Biosensor, can bind Bevacizumab (IgG1) with an affinity constant of 0.65 μM as determined in a BLI assay (ForteBio Octet Red384).



Three independent batches of Human FcγRIIA/CD32a (R167) protein (Cat#: 10374-H08H) were evaluated for their binding affinity towards Bevacizumab (IgG1) in BLI assays (ForteBio Octet Red384). The result indicated that the batch variation was minimal and fell within the expected range of method variability.

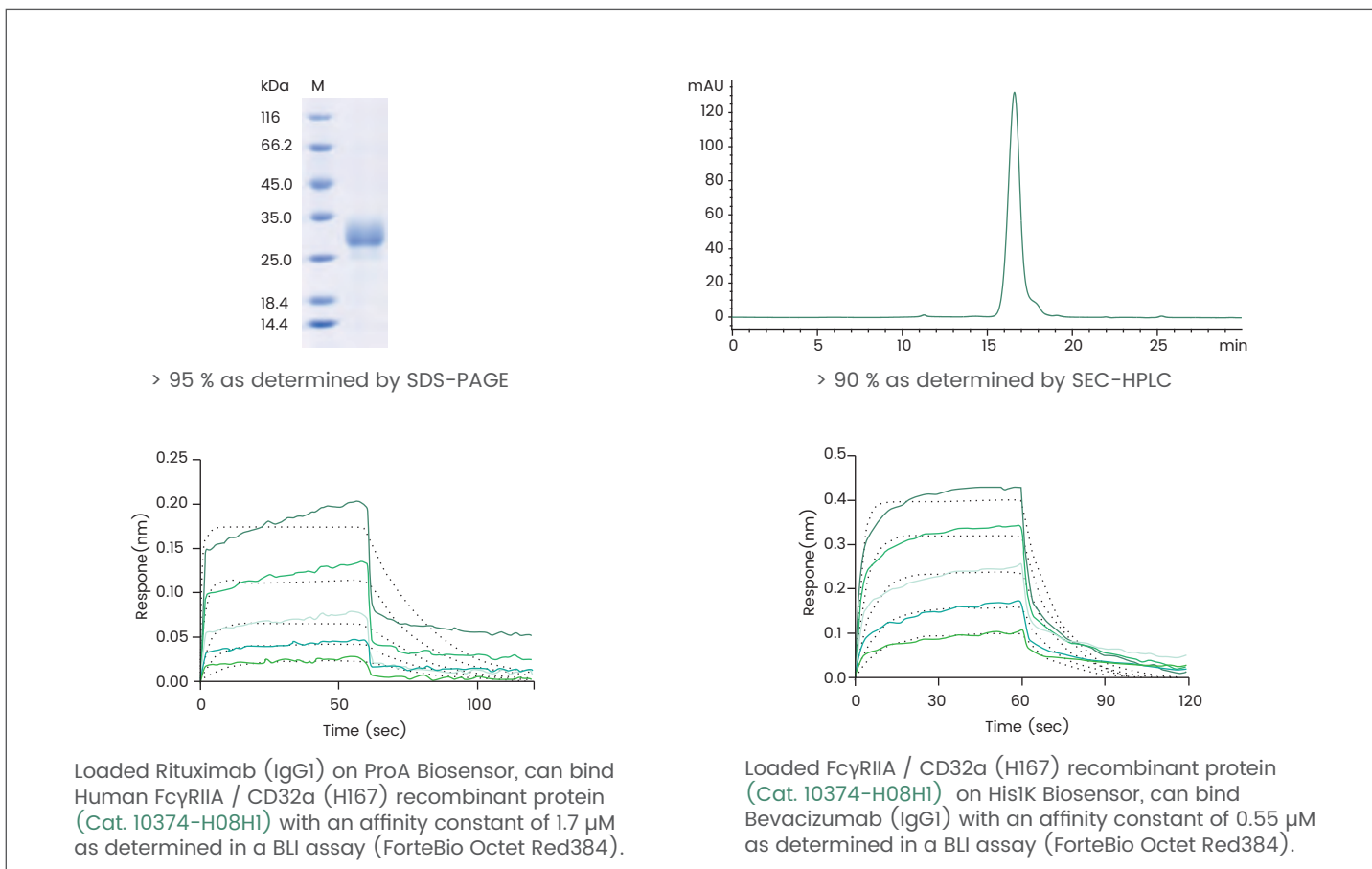
Biotinylated Human FcγRIIA / CD32a (R167) protein

10374-H27H-B



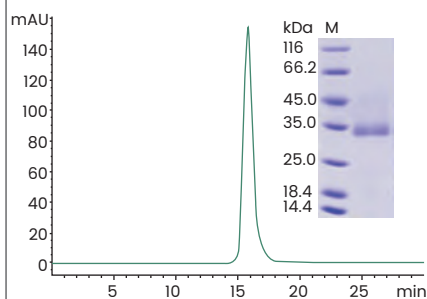
Human FcγRIIA / CD32a (H167) protein

10374-H08HI

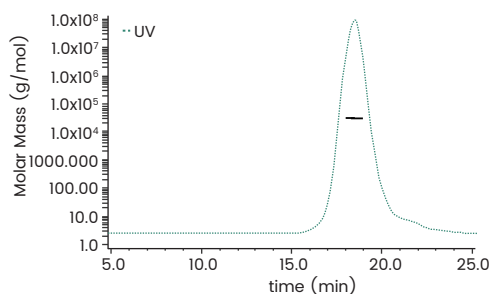


Biotinylated Human FcγRIIA / CD32a (H167) protein

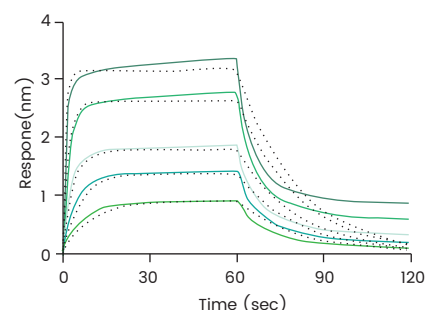
10374-H27HI-B



≥ 95% as determined by
SDS-PAGE & SEC-HPLC



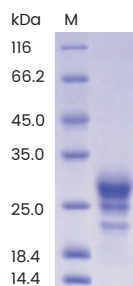
≥ 95% as determined by SEC-MALS
(MW ~20-38 kDa)



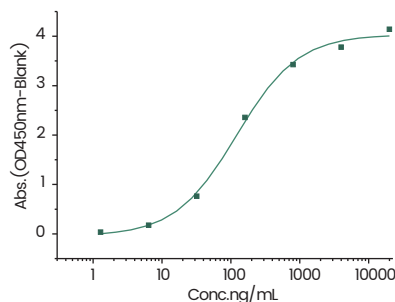
Loaded Biotinylated Human FcγRIIA / CD32a (H167) recombinant protein (His & Avi Tag) (Cat. 10374-H27HI-B) on SA Biosensor, can bind Rituximab (IgG1) with an affinity constant of 0.53 μM as determined in a BLI assay (ForteBio Octet Red384).

Human FcγRIIB/C / CD32b/c protein

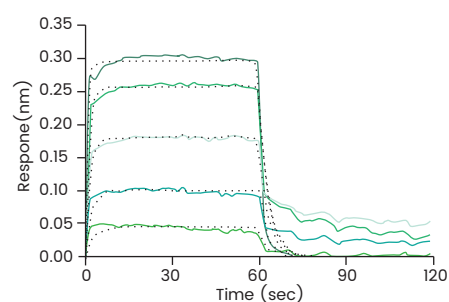
10259-H08C



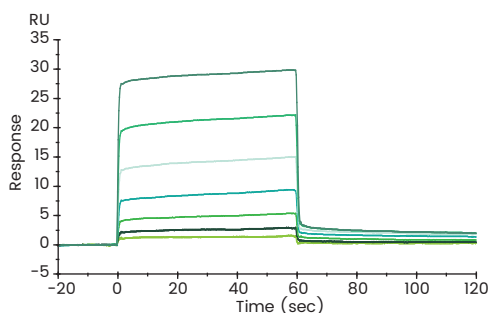
> 95% as determined
by SDS-PAGE



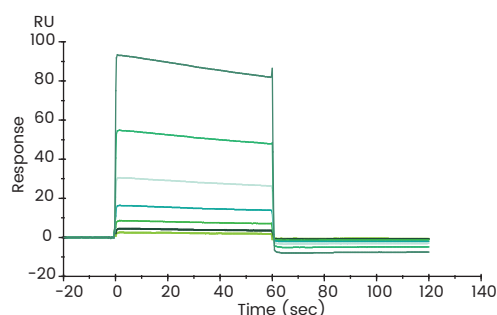
Immobilized Human FcγRIIB/C / CD32b/c recombinant protein (Cat. 10259-H08C) can bind biotinylated human IgG1. The EC₅₀ is 60-180 ng/mL.



Loaded Human FcγRIIB/C / CD32b/c recombinant protein (Cat. 10259-H08C) on His1K Biosensor, can bind Rituximab (IgG1) with an affinity constant of 1.5 μM as determined in a BLI assay (ForteBio Octet Red384).



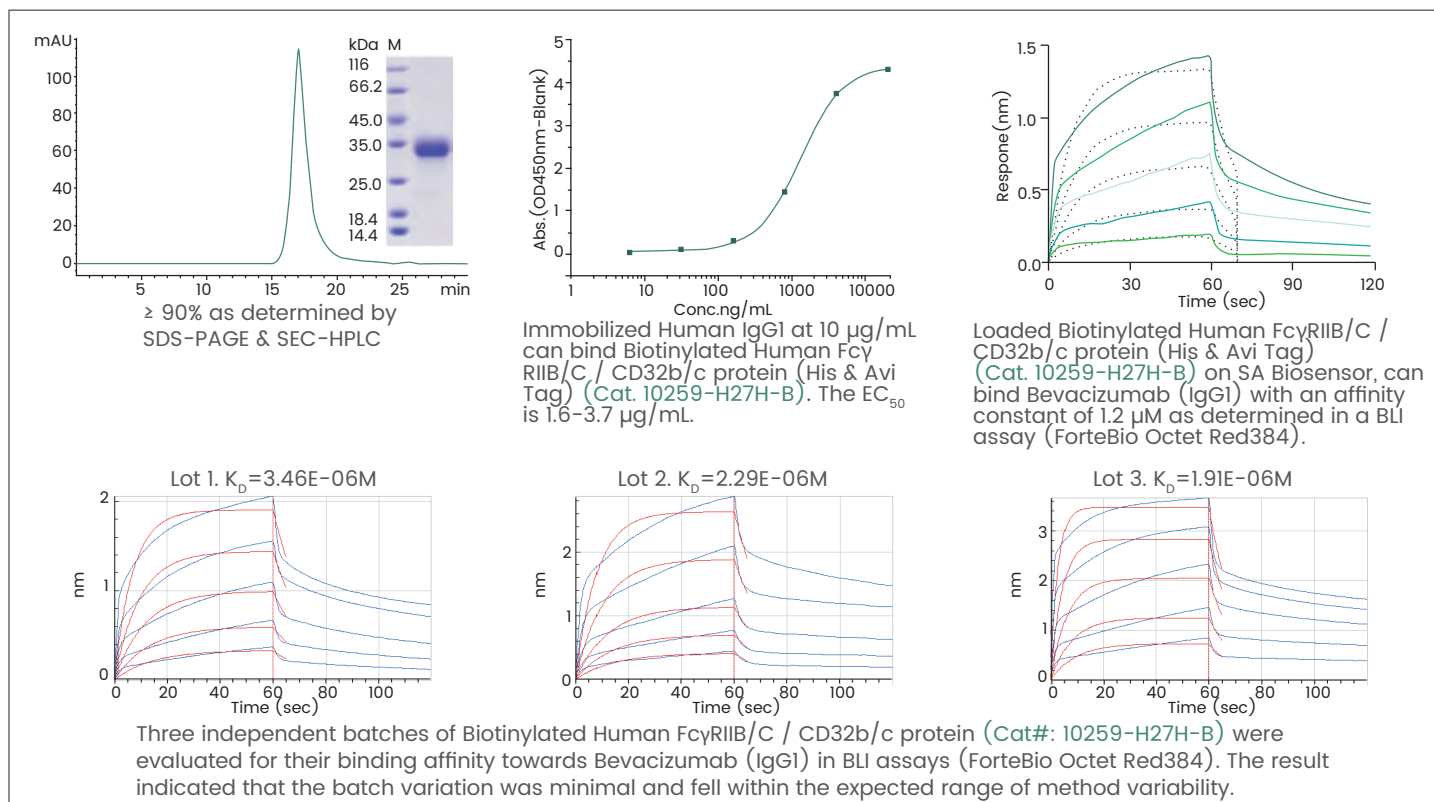
Captured IgG1 on proteinA Chip can bind Human FcγRIIB/C / CD32b/c recombinant protein (Cat. 10259-H08C) with an affinity constant of 2.9 μM as determined in an SPR assay (Biacore T200).



Captured Human CD32b/c recombinant protein (10259-H08C) on Anti-His Chip can bind IgG1 Fc Protein, His (Cat. 10702-HNAC) with an affinity constant of 37.5 μM as determined in an SPR assay (Biacore T200).

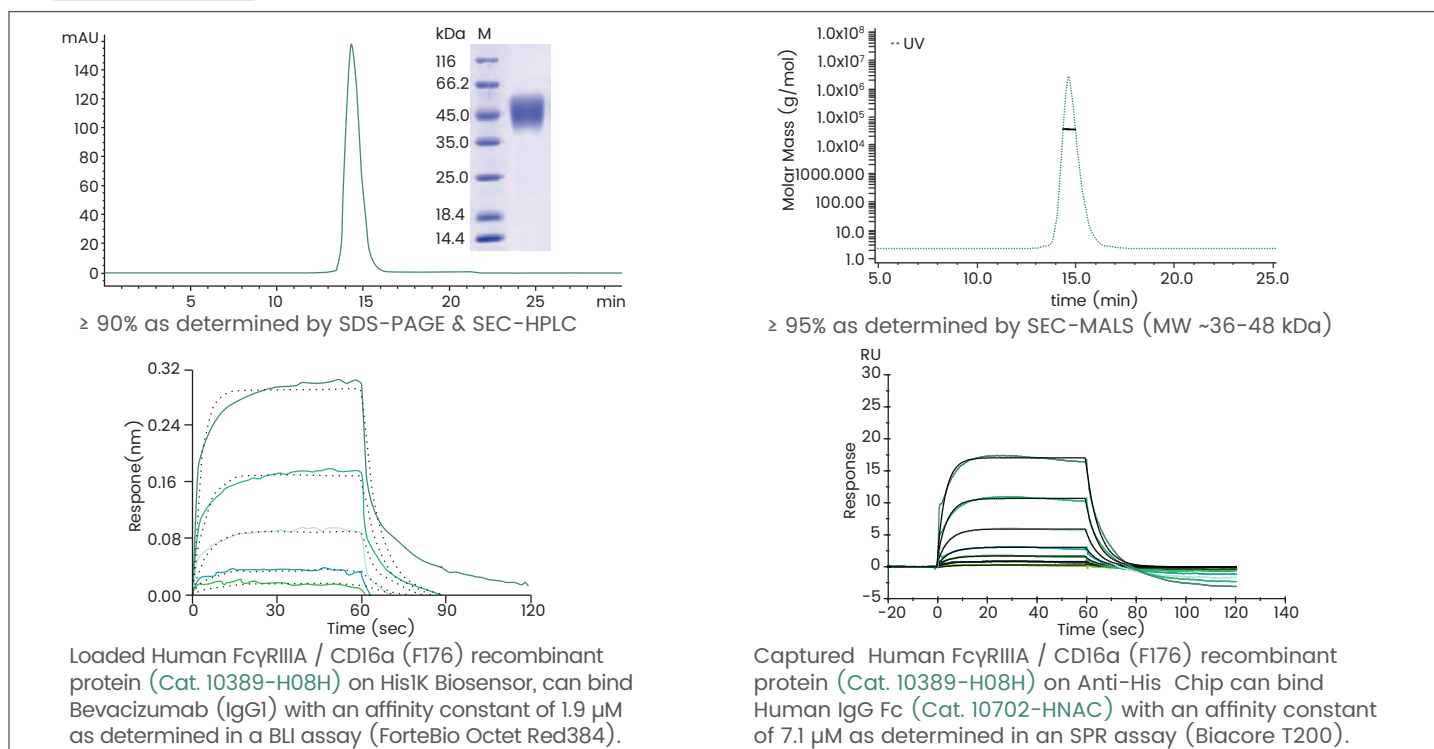
Biotinylated Human FcγRIIB/C / CD32b/c protein

10259-H27H-B



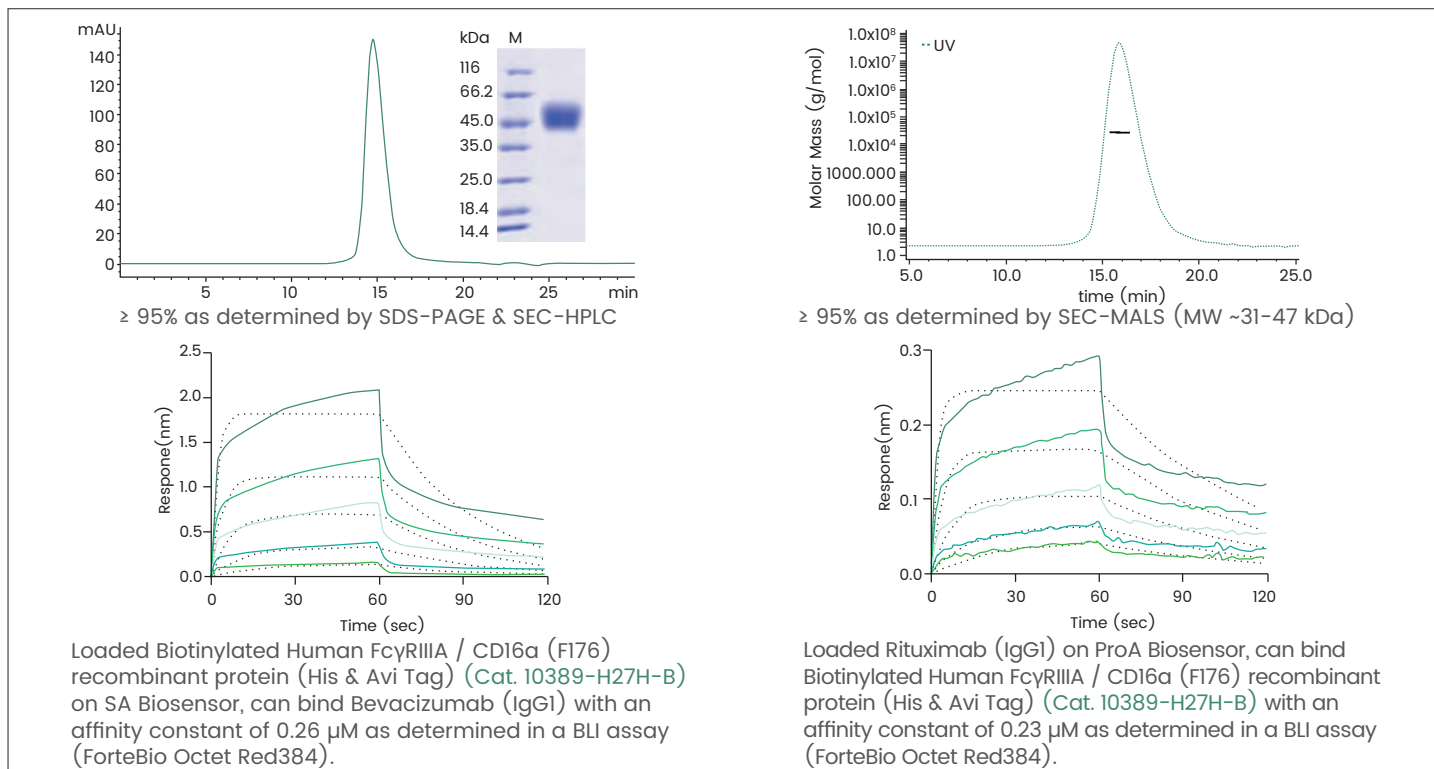
Human FcγRIIIA / CD16a (F176) protein

10389-H08H



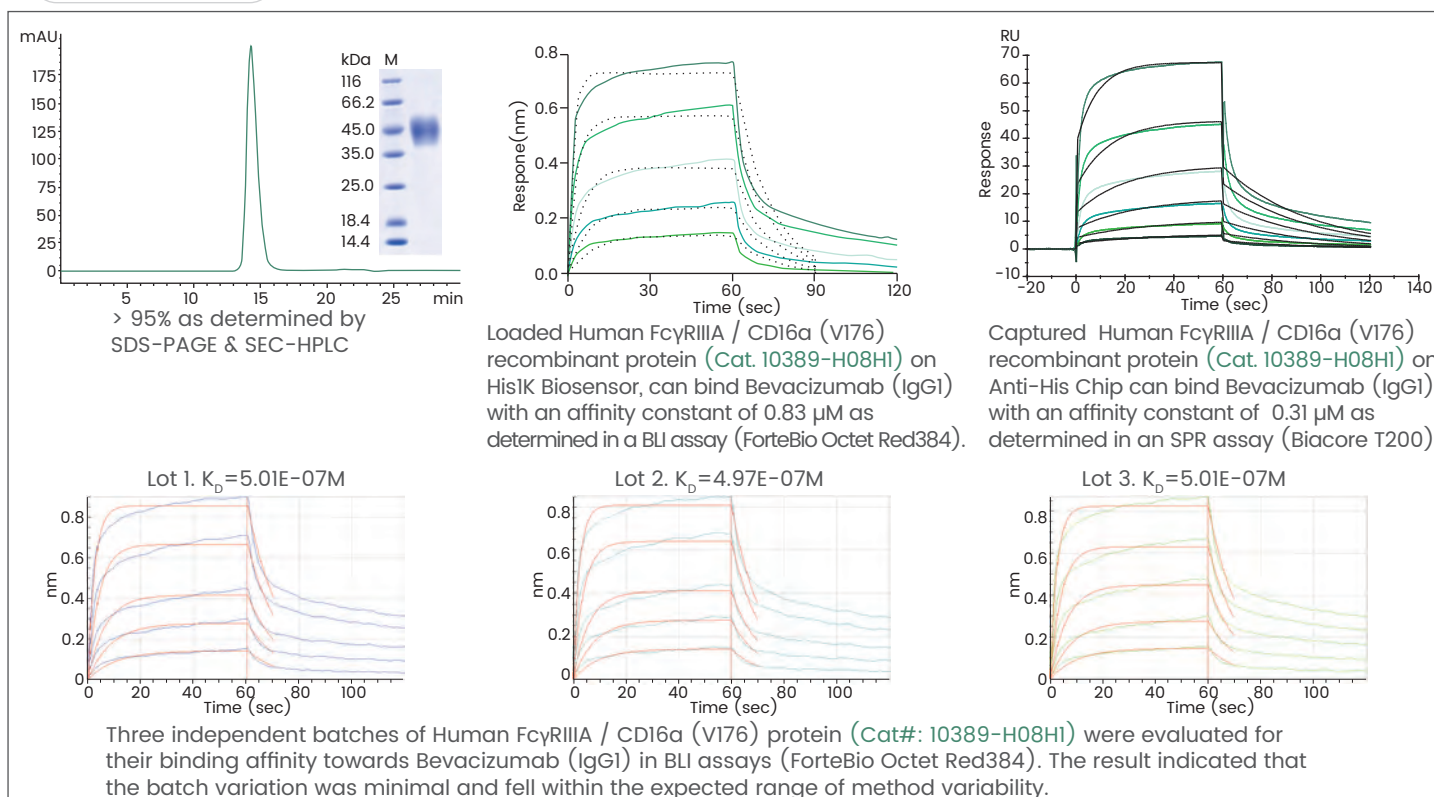
Biotinylated Human FcγRIIIA / CD16a (F176) protein

10389-H27H-B



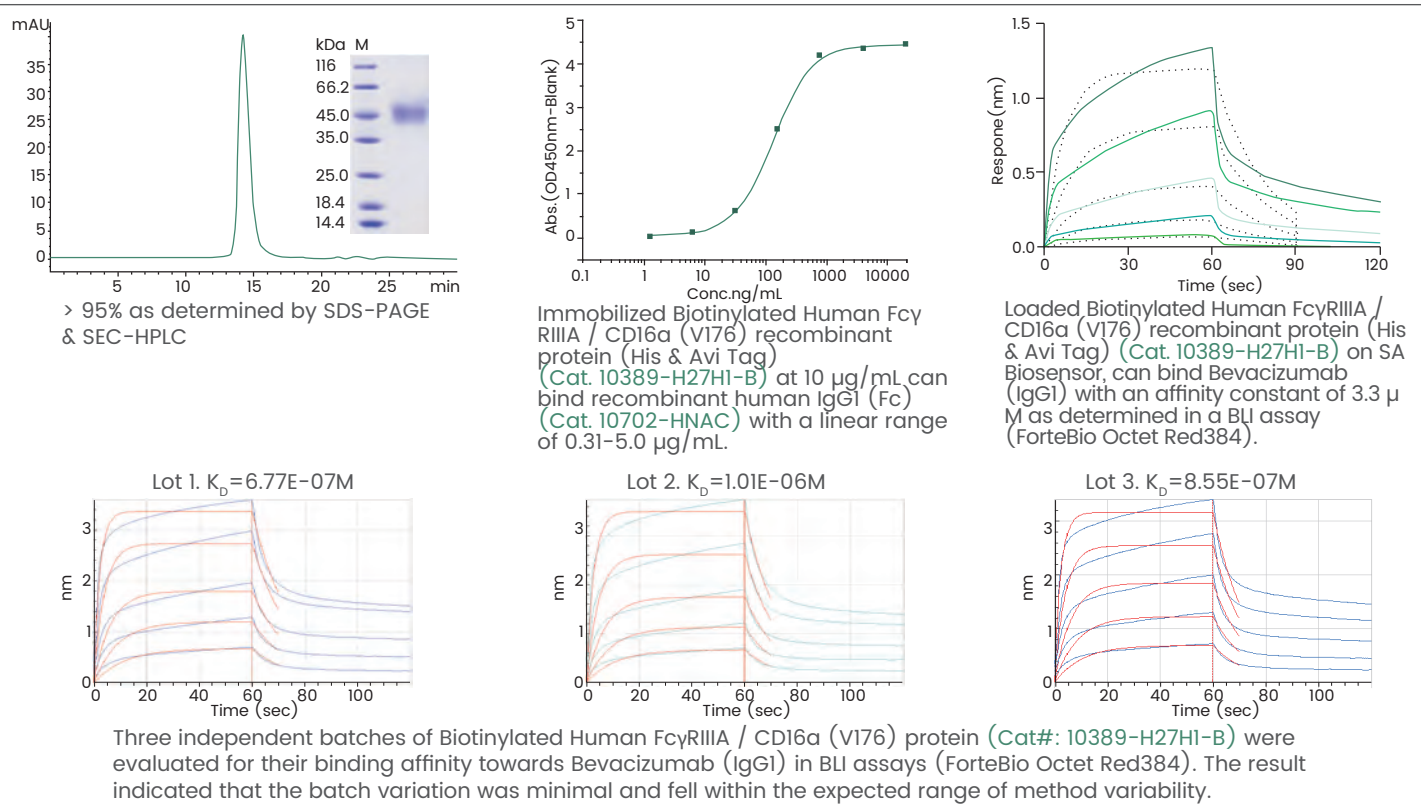
Human FcγRIIIA / CD16a (V176) protein

10389-H08HI



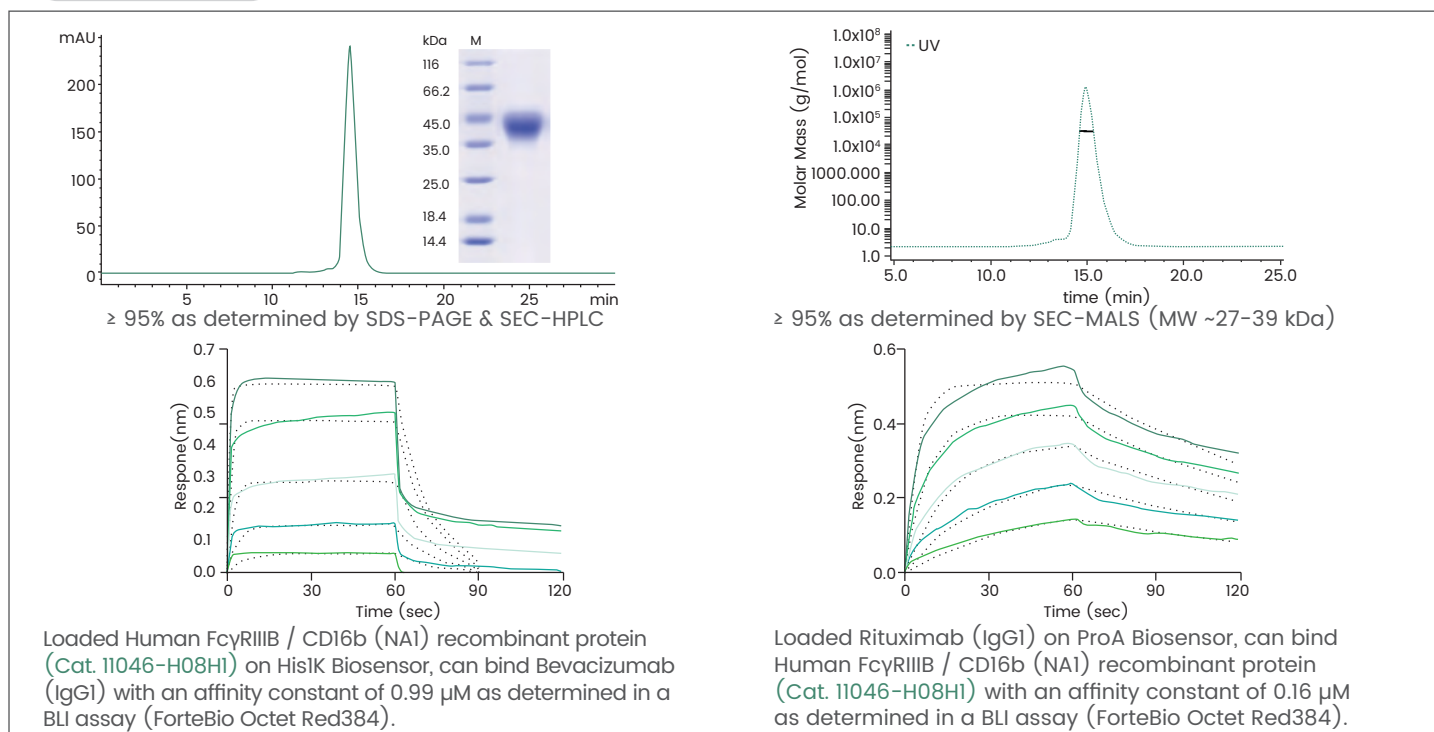
Biotinylated Human FcγRIIIA / CD16a (V176) protein

10389-H27HI-B



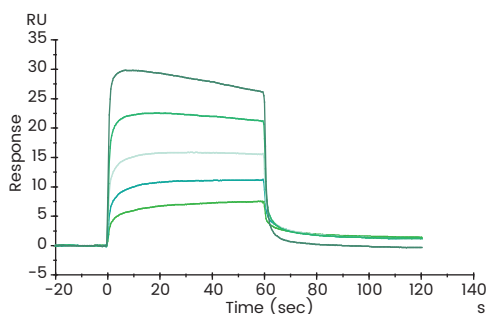
Human FcγRIIIB / CD16b (NA1) protein

11046-H08HI

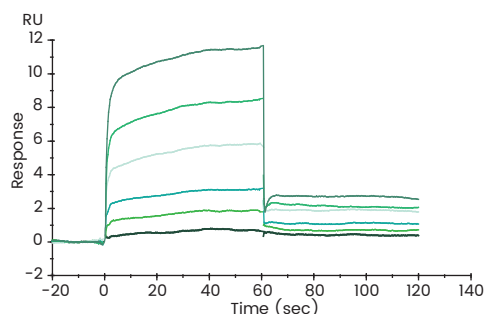


Human FcγRIIIB / CD16b (NA1) protein

11046-H08HI



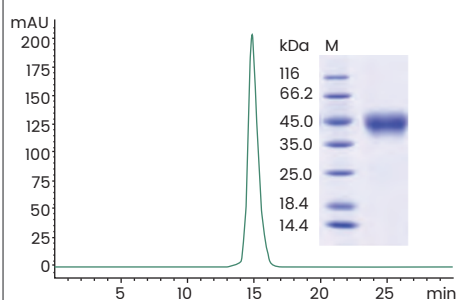
Captured Human FcγRIIIB / CD16b (NA1) recombinant protein (Cat. 11046-H08HI) on anti-His Chip can bind Bevacizumab (IgG1) with an affinity constant of $0.2 \mu\text{M}$ as determined in an SPR assay (Biacore T200).



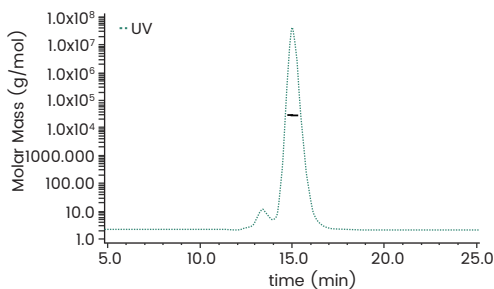
Captured IgG1 on protein A Chip can bind Human FcγRIIIB / CD16b (NA1) recombinant protein (Cat. 11046-H08HI) with an affinity constant of $0.22 \mu\text{M}$ as determined in an SPR assay (Biacore T200).

Biotinylated Human FcγRIIIB / CD16b (NA1) protein

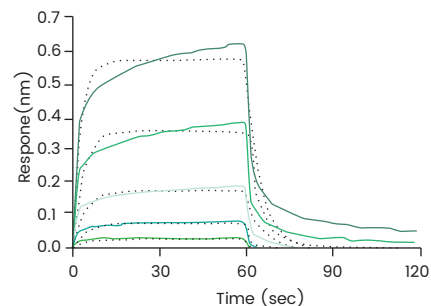
11046-H27HI-B



$\geq 90\%$ as determined by SDS-PAGE & SEC-HPLC



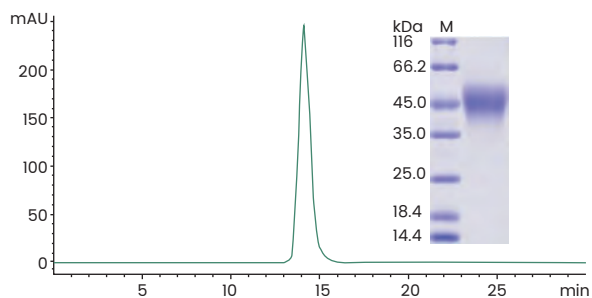
$\geq 95\%$ as determined by SEC-MALS (MW ~26-44 kDa)



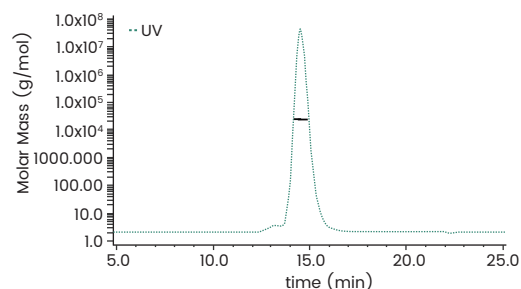
Loaded Biotinylated Human FcγRIIIB / CD16b (NA1) recombinant protein (His & Avi Tag) (Cat. 11046-H27HI-B) on SA Biosensor, can bind Rituximab (IgG1) with an affinity constant of $4.3 \mu\text{M}$ as determined in a BLI assay (ForteBio Octet Red384).

Human FcγRIIIB / CD16b (NA2) protein

11046-H08H



$\geq 90\%$ as determined by SDS-PAGE & SEC-HPLC



$\geq 95\%$ as determined by SEC-MALS (MW ~33-43 kDa)

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