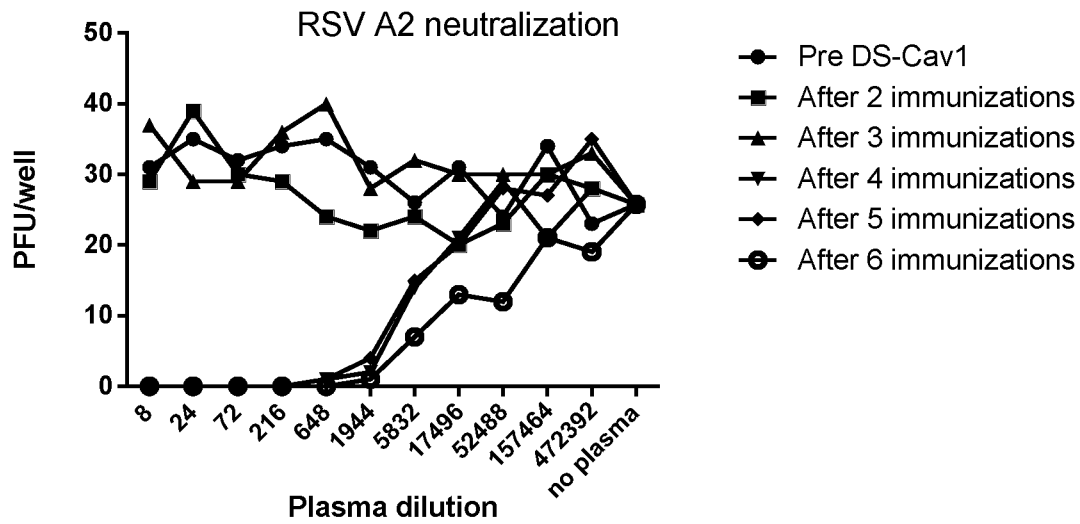


Figure 1

A



B

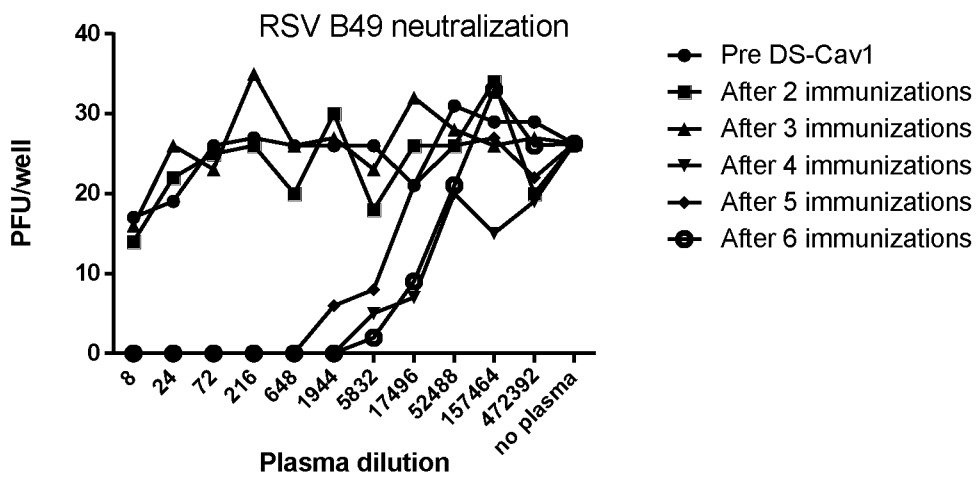
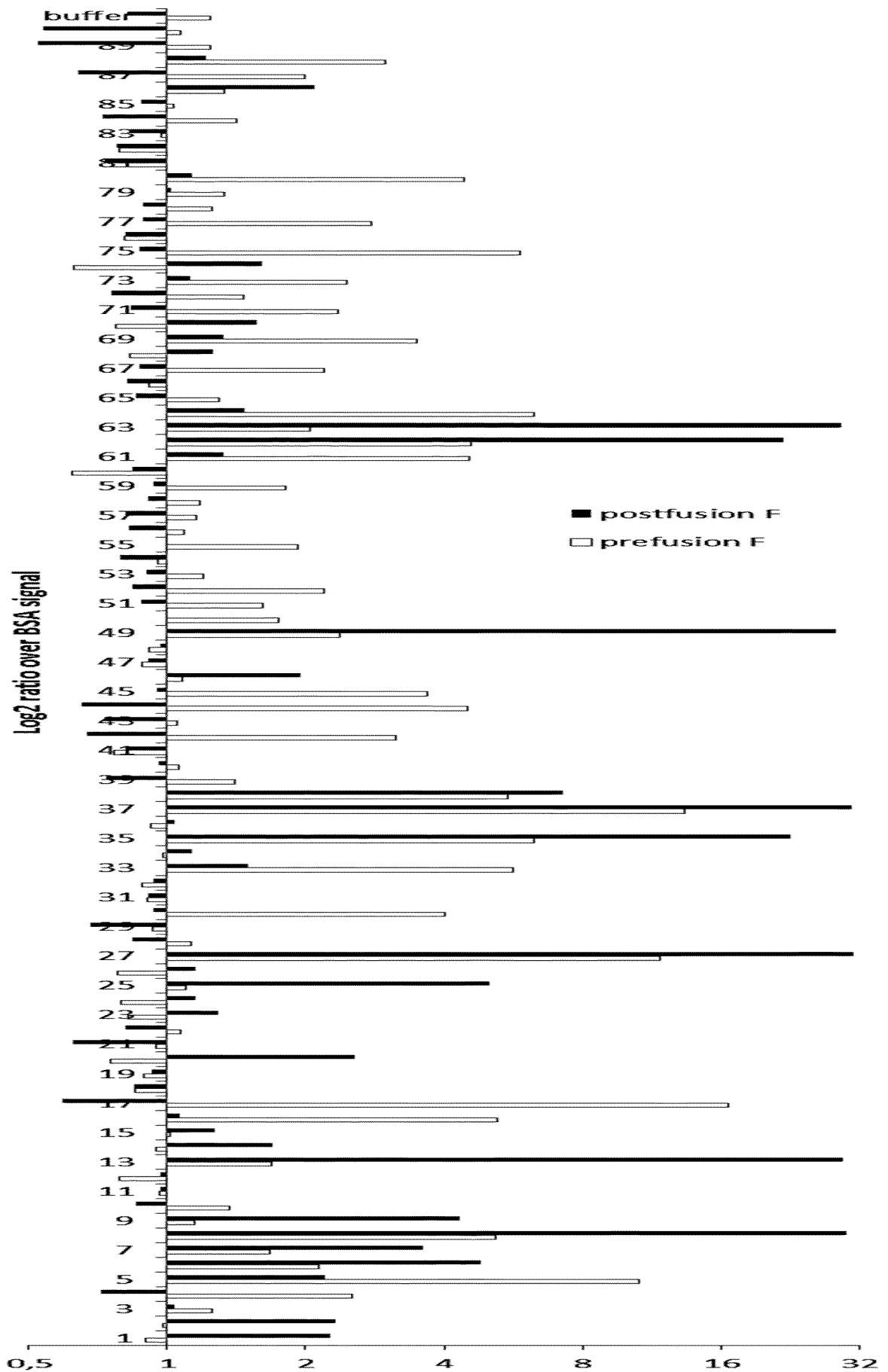


Figure 2



The image displays two 96-well microtiter plates used for spot assays. The top plate features four columns highlighted with black boxes, containing the numbers 1, 4, 8, 13, 37, 42, 44, 45, 49, 52, 63, and 73 in the first row. The bottom plate shows the numbers 30, 30, 30, 30, 33, 33, 33, 35, 35, 35, 35, and 38 in the first row. Both plates are organized into sections with serial dilutions (1/60, 1/600, 1/6000) indicated on the left side. The wells contain varying concentrations of a substance, likely for testing growth or activity.

Figure 3 continued

B

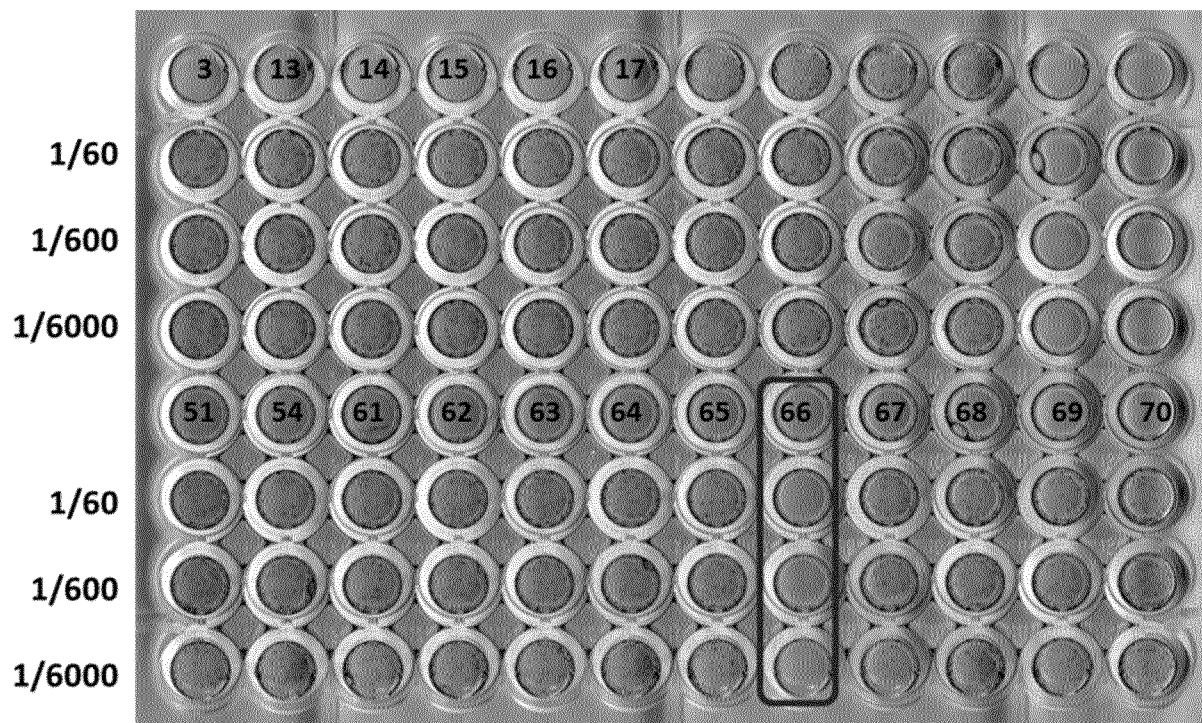


Figure 4

A

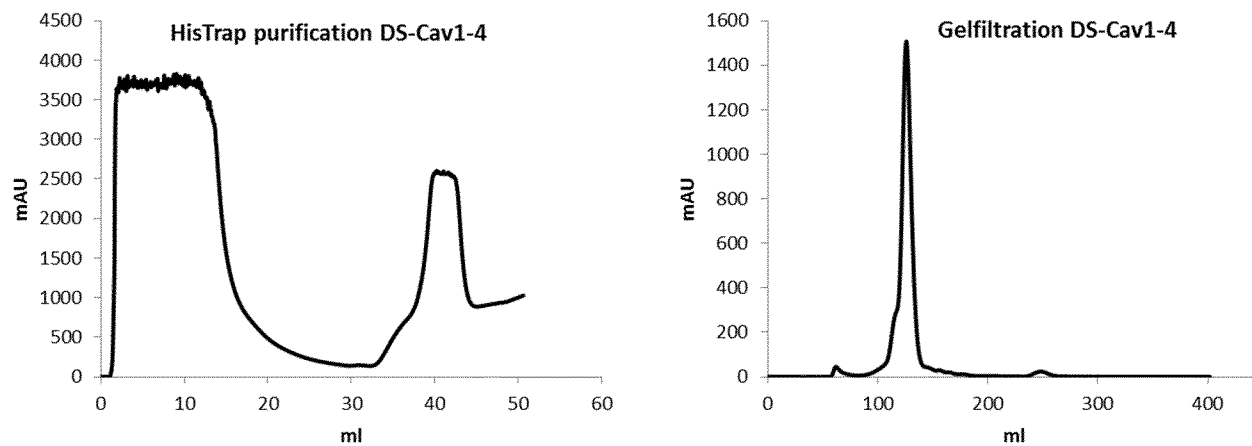
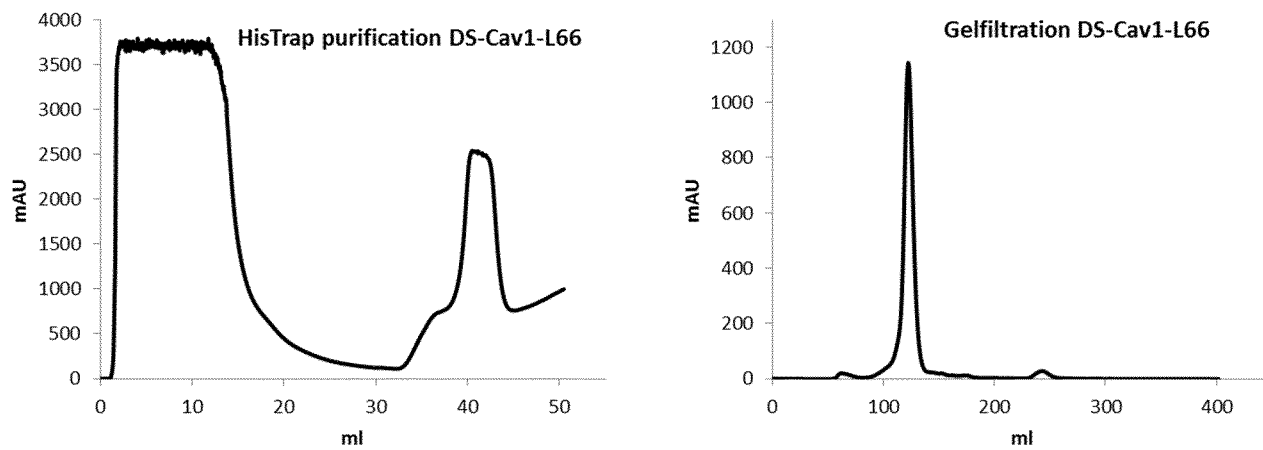
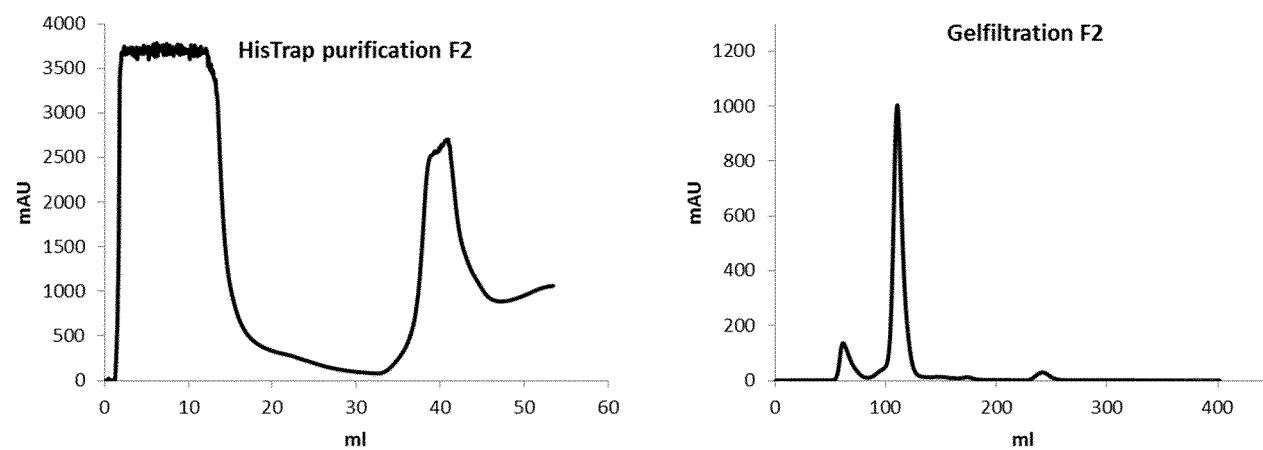


Figure 4 continued

B



C



D

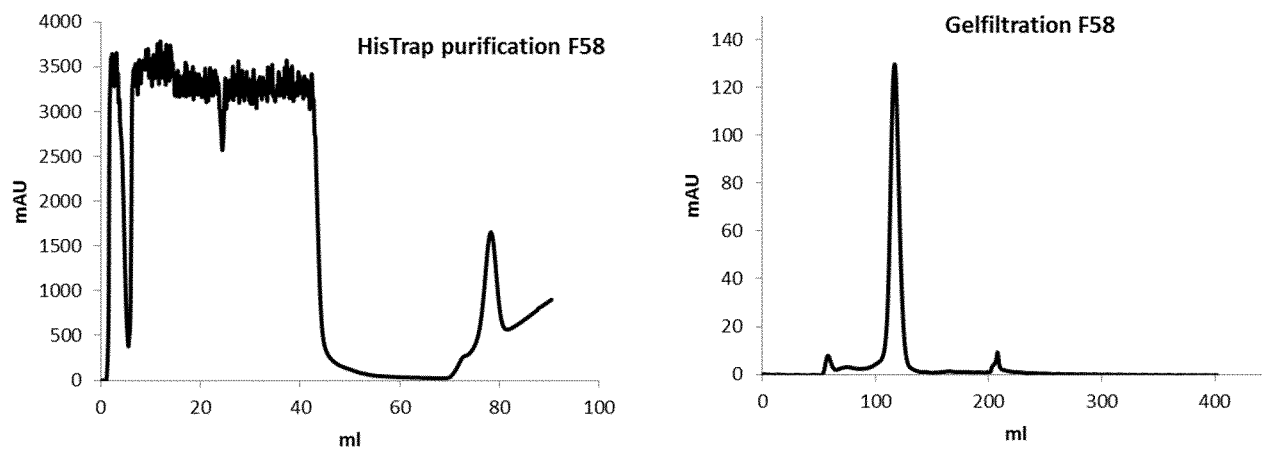


Figure 5**A**

DS-Cav1-4

CAGGTGCAGCTGCAGGAGTCTGGGGGAGGCTTGGTGCAGCCTGGGGGGTCTCTGAGACTCTCCTGT
GCAGCCTCTGGATTCACTTTGGATTATTATTACATAGGCTGGTTCCGCCAGGCCCCAGGGAAGGAGCG
CGAGGCAGTCTCATGTATTAGTGGTAGTAGTGGTAGCACATACTATCCAGACTCCGTGAAGGGCCGAT
TCACCATCTCCAGAGACAATGCCAAGAACACGGTGTATCTGCAAATGAACAGCCTGAAACCTGAGGAC
ACGGCCGTTTATTACTGTGCGACAATTCGTAGTAGTAGCTGGGGGGGTTGCGTGCACTACGGCATGG
ACTACTGGGGCAAAGGGACCCAGGTCACCGTCTCCAGCCACCACCATCACCATCACTAG

B

DS-Cav1-L66

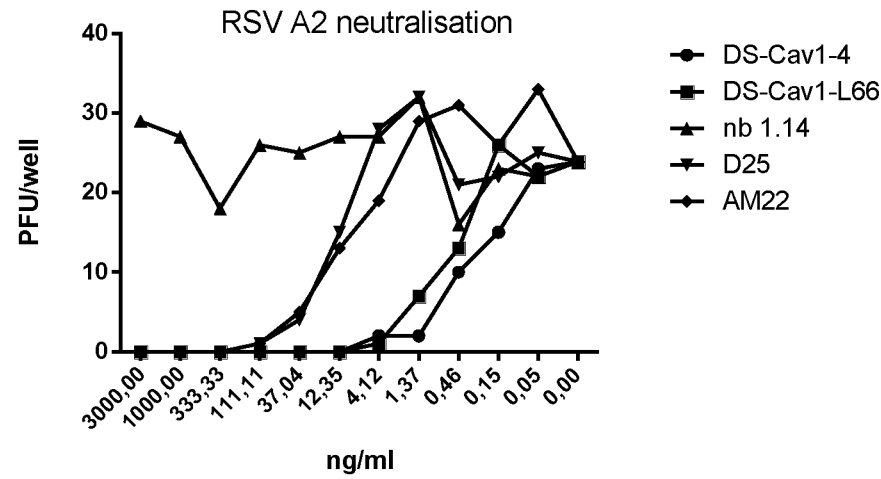
CAGGTGCAGCTGCAGGAGTCTGGGGGAGGCTTGGTGCAGCCTGGGGGGTCTCTGAGACTCTCCTGT
GCAGCCTCTGGATTCACTTTGGATTATTATTACATAGGCTGGTTCCGCCAGGCCCCAGGGAAGGAGCG
CGAGGGGGTCTCATGTATTAGTAGTAGTCATGGTAGCACATACTATGCAGACTCCGTGAAGGGCCGAT
TCACCATCTCCAGAGACAATGCCAAGAACACGGTGTATCTGCAGATGAACAGCCTGAAACCTGAGGAC
ACGGCCGTTTATTACTGTGCGACAGTAGCTGTAGCACATTTCCGGGGTTGCGGAGTCGACGGCATGG
ACTACTGGGGCAAAGGGACCCAGGTCACCGTCTCCAGCCACCACCATCACCATCACTAG

C

		20		CDR1	40
DS-Cav1-4	QVQLQESGGGLVQPGGSLRLS	CAAS	GFTLDYYYIG	WFRQA	40
DS-Cav1-L66	QVQLQESGGGLVQPGGSLRLS	CAAS	GFTLDYYYIG	WFRQA	40
		60		80	
	CDR2				
DS-Cav1-4	PGKEREAVS	CISGSSGSTYYPD	SVKGRFTISR	DNAKNTVY	80
DS-Cav1-L66	PGKEREGVS	CISSSHGSTYYAD	SVKGRFTISR	DNAKNTVY	80
		100		120	
			CDR3		
DS-Cav1-4	LQMNSLKPEDTAVYYCAT	IRSSSWGGCVHYG	MDYWGKGTQ	120	
DS-Cav1-L66	LQMNSLKPEDTAVYYCAT	VAVAHFRGCGVD	GMDYWGKGTQ	120	
	6xHIS				
DS-Cav1-4	VTVSS	HHHHHH		131	
DS-Cav1-L66	VTVSS	HHHHHH		131	

Figure 6

A



B

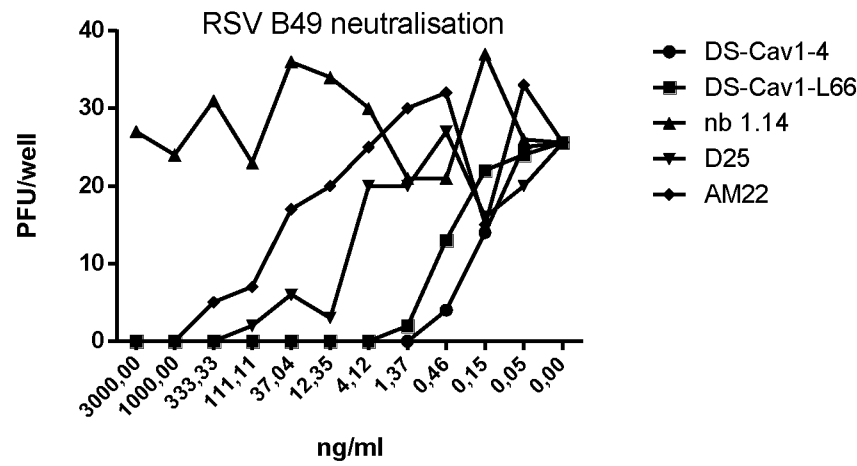


Figure 6 continued

C

	RSV A2 IC ₅₀		RSV B49 IC ₅₀	
	ng/ml	nM	ng/ml	nM
DS-Cav1-4	0,31	0,021	0,23	0,015
DS-Cav1-L66	0,46	0,032	0,46	0,032
D25	18,5	0,123	8,24	0,055
AM22	12,35	0,082	74,08	0,494

D

IC ₅₀ (ng/ml)	hMPV-A1-GFP	hMPV-B1-GFP	hRSV-A2-GFP
F-VHH-4	>30,000	>30,000	0.47
F-VHH-L66	>30,000	>30,000	0.59
Crtl-VHH	ND*	>30,000	>30,000
MPE8	ND	108	47
101F	216	783	124
MF14**	249	319	ND
Motavizumab	ND	ND	33

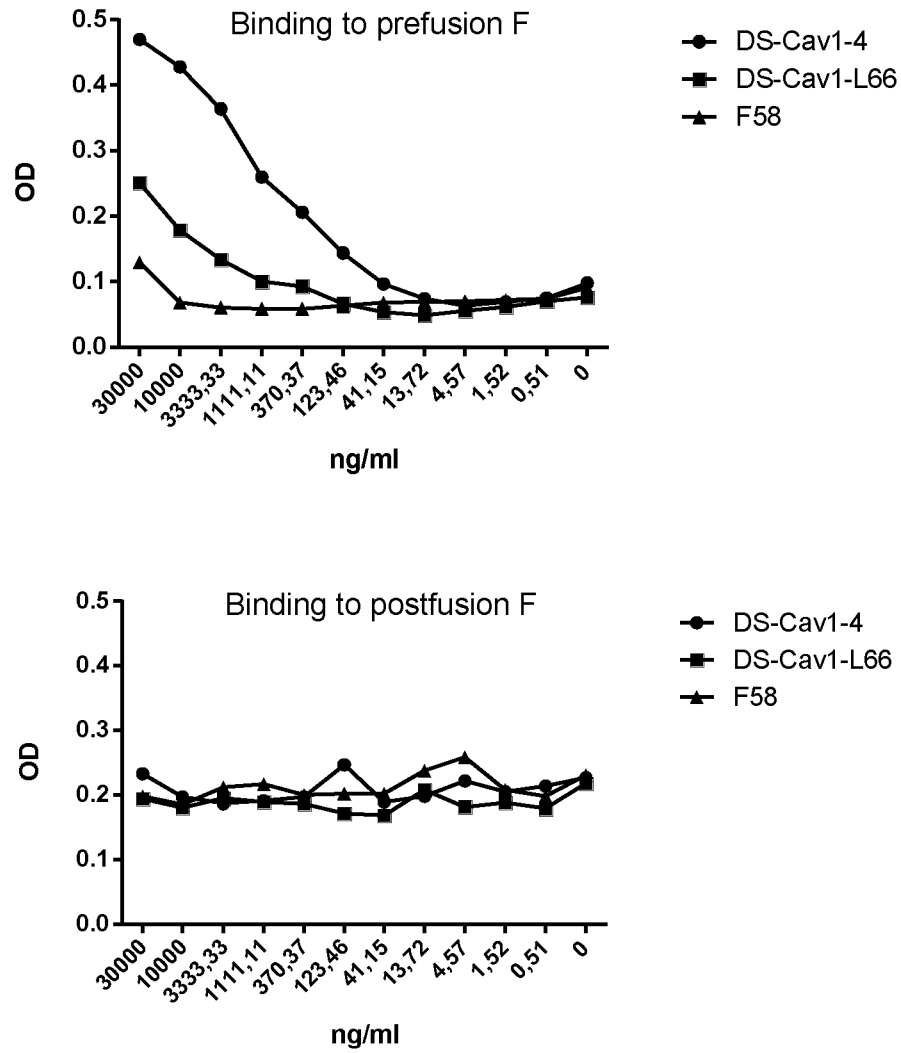
*ND, not determined

**MF14 is a monoclonal antibody specific for the hMPV F glycoprotein

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Figure 7

A

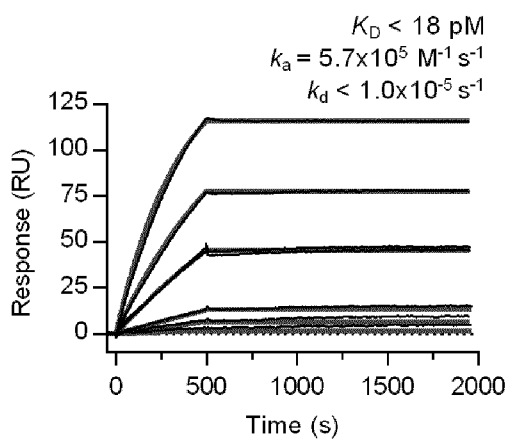


10/17

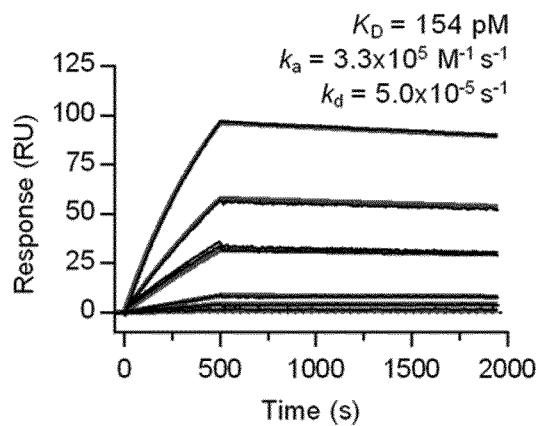
Figure 7 continued

B

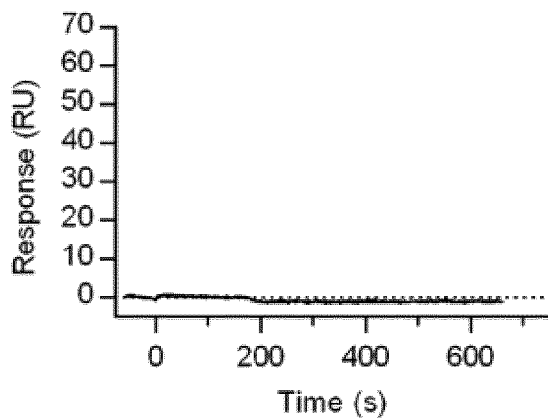
Binding of DS-Cav1-4 to prefusion F



Binding of DS-Cav1-L66 to prefusion F



Binding of DS-Cav1-4 to postfusion F



Binding of DS-Cav1-L66 to postfusion F

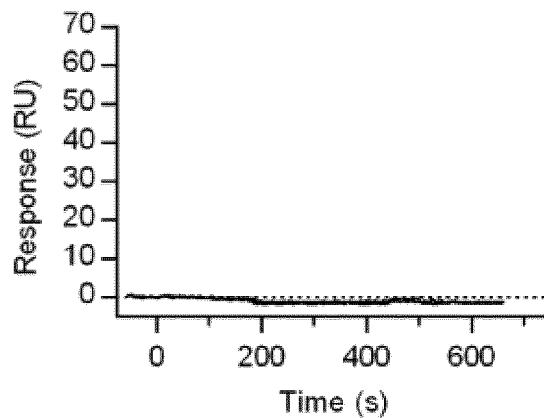


Figure 8

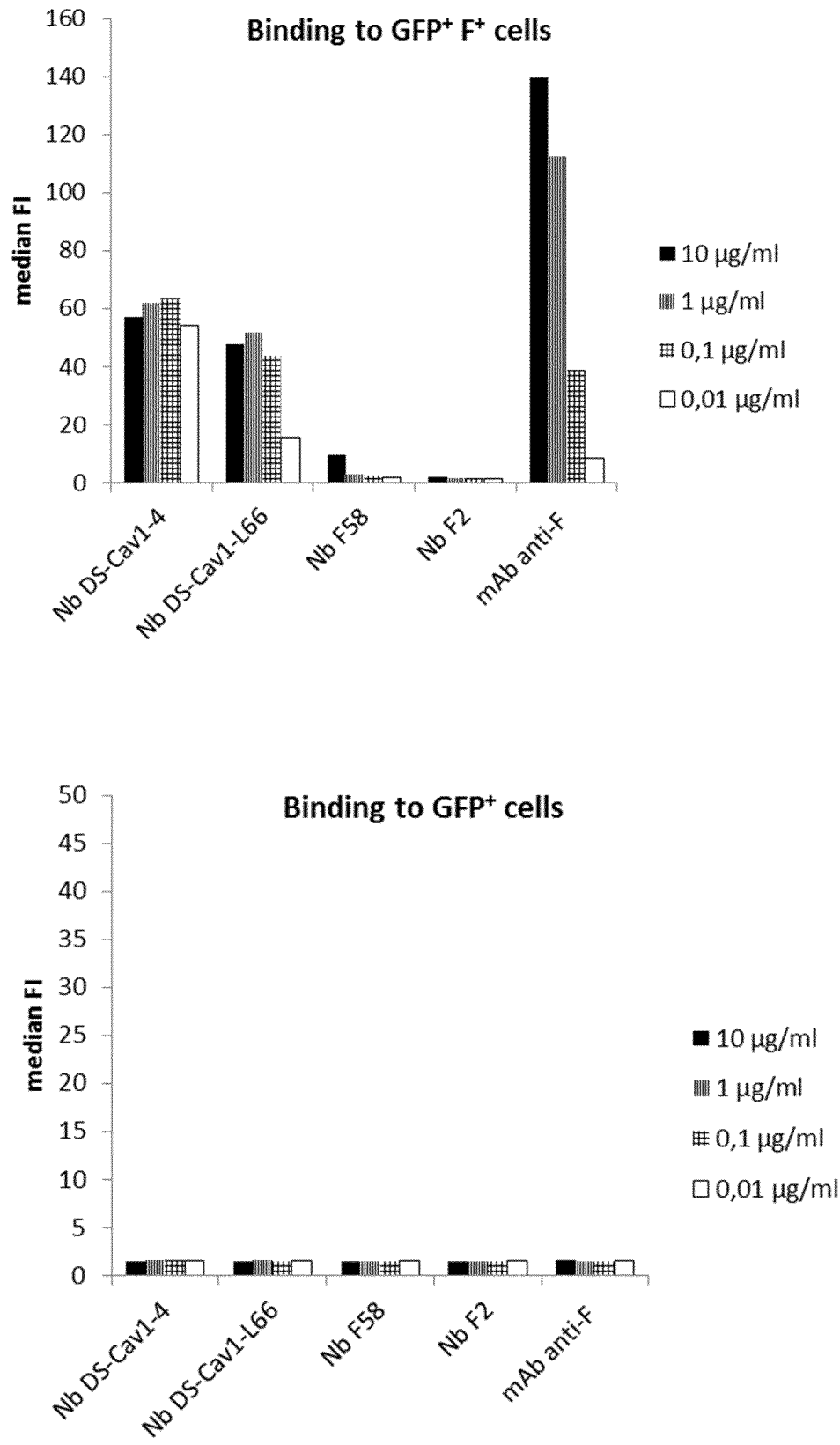
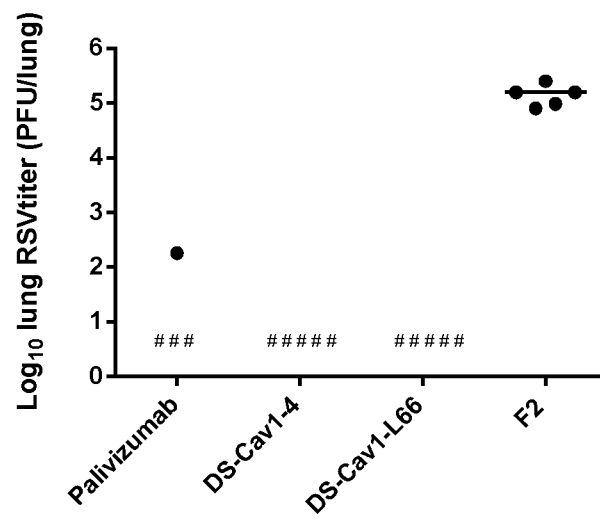


Figure 9

Competitor	Analyte			
	F2	DS-Cav1-L66	DS-Cav1-4	D25
F2	NB	17.5	12.8	5.4
DS-Cav1-L66	NB	82.1	58.3	11.7
DS-Cav1-4	NB	105.0	81.7	18.3
D25	NB	27.1	8.3	88.4

Figure 10

A



B

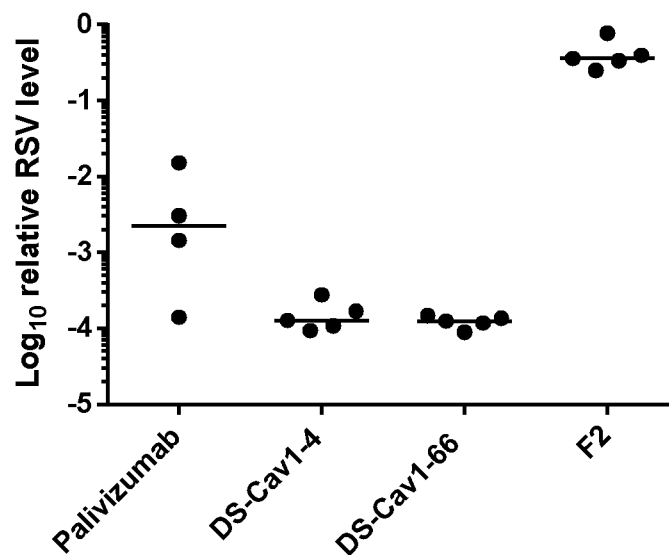


Figure 11

A

R_{free}/R_{work}: 27.7/19.4%

Buried Surface Area

On F₂ Protomer 1: 116 Å²On F₁ Protomer 1: 640 Å²On F₁ Protomer 2: 400 Å²Total: 1156 Å²

Residues on RSV F contacted by nanobody

QNITEEFYQSTCSAVSKGYLSALR**TGWY**TSVITIELSNIKENKCNGTDAKVK
LIKQELDKYKNAVTELQLLMQSTPATNNRARR

FLGFLLGVGSAIASGVAVCKVLHLEGEV NKIKSALLSTNKAVVSL**SNGVSVL**
TFKVLDLKNYIDKQLLPILNKQSCSISNIETVIEFQQKNNRLLLEITREFSVN
AGVTTTPVSTYMLTNSELLSLINDM**PITNDQ**KKLMSNNVQIVRQQSYSIMCII
KEEVLAYVVQL**PLYGV**IDTPCWKLHTSPLCTTNTKEGSNICLTRTDGRGWYCD
NAGSVSFFPQAETCKVQSNRVFCDTMNSLTLPSEVNLCNVDIFNPKYDCKIM
TSKTDVSSSVITSLGAIVSCYGK**TCTASNKNRGI**IKTFSGNCDYVSNKGVD
TV**SVGN**TLYYV NKQEGKSLYVKGEPIINFYDPLVFPSEFDASISQVNEKIN
QSLAFIRKSDELL

B

R_{free}/R_{work}: 30.21/27.06%

Buried Surface Area

On F₂ Protomer 1: 116 Å²On F₁ Protomer 1: 610 Å²On F₁ Protomer 2: 450 Å²Total: 1176 Å²

Residues on RSV F contacted by nanobody

QNITEEFYQSTCSAVSKGYLSALR**TGWY**TSVITIELSNIKENKCNGTDAKVK
LIKQELDKYKNAVTELQLLMQSTPATNNRARR

FLGFLLGVGSAIASGVAVCKVLHLEGEV NKIKSALLSTNKAVVSL**SNGVSVL**
TFKVLDLKNYIDKQLLPILNKQSCSISNIETVIEFQQKNNRLLLEITREFSVN
AGVTTTPVSTYMLTNSELLSLINDM**PITNDQ**KKLMSNNVQIVRQQSYSIMCII
KEEVLAYVVQL**PLYGV**IDTPCWKLHTSPLCTTNTKEGSNICLTRTDGRGWYCD
NAGSVSFFPQAETCKVQSNRVFCDTMNSLTLPSEVNLCNVDIFNPKYDCKIM
TSKTDVSSSVITSLGAIVSCYGK**TCTASNKNRGI**IKTFSGNCDYVSNKGVD
TV**SVGN**TLYYV NKQEGKSLYVKGEPIINFYDPLVFPSEFDASISQVNEKIN
QSLAFIRKSDELL

Figure 11 continued

C

SEQ ID NO: 17:

```
1  MELLILKANA ITTILTAVTF CFASGQNITE EFYQSTCSAV SKGYLSALRT GWYTSVITIE
61  LSNIKENKCN GTDAKVLIK QELDKYKNAV TELQLLMQST PATNNRARRE LPRFMNYTLN
121 NAKKTNVTLS KKRKRRFLGF LLGVGSAIAS GVAVCKVLHL EGEVNKIKSA LLSTNKAVVS
181 LSNGVSVLTF KVLDLKNIYD KQLLPILNKQ SCSISNIETV IEFQQKNRNL LEITREFSVN
241 AGVTTPVSTY MLTNSELLSL INDMPITNDQ KKLMSNNVQI VRQQSYSIMC IIKEEVLAYV
301 VQLPLYGVID TPCWKLHTSP LCTTNTKEGS NICLTRTRDG WYCDNAGSVS FFPQAETCKV
361 QSNRVFCDTM NSLTLPSEVN LCNVDIFNPK YDCKIMTSKT DVSSSVITSL GAIVSCYGKT
421 KCTASNKNRG IIKTFSNGCD YVSNKGVDTV SVGNTLYYVN KQEGKSLYVK GEPIINFYDP
481 LVFPSDEFDA SISQVNEKIN QSLAFIRKSD ELLSAIGGYI PEAPRDGQAY VRKDGEWVLL
541 STFLGGLVPR GSHHHHHHSA WSHPOFEK
```

D

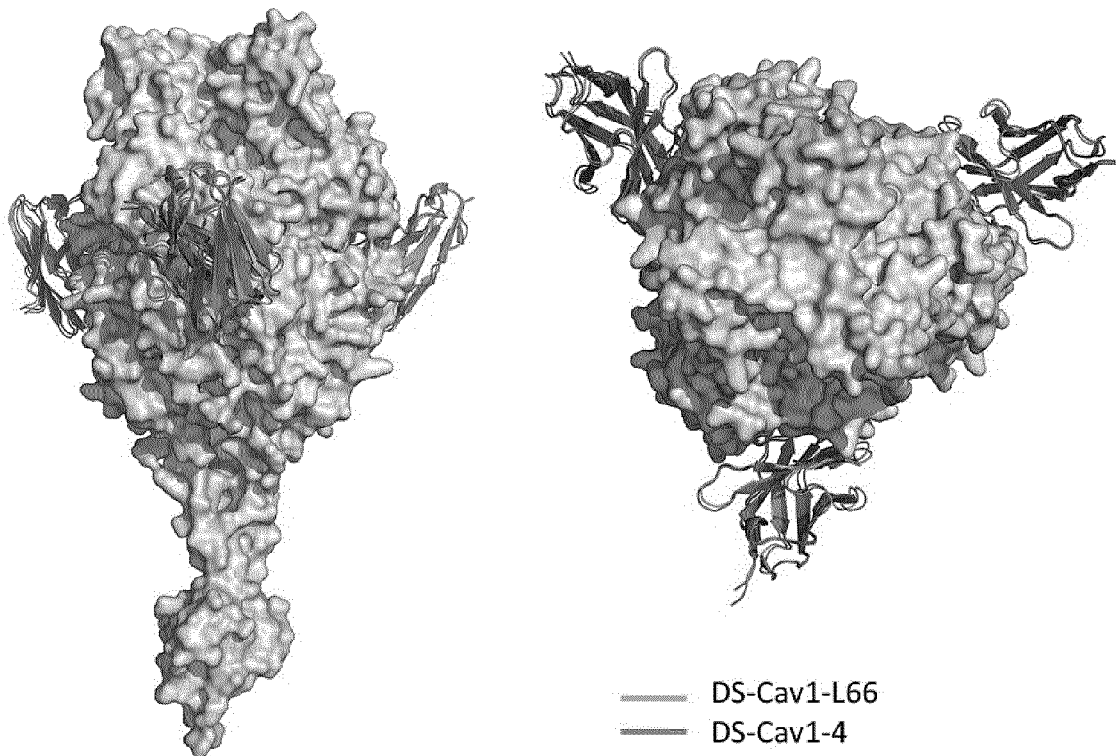
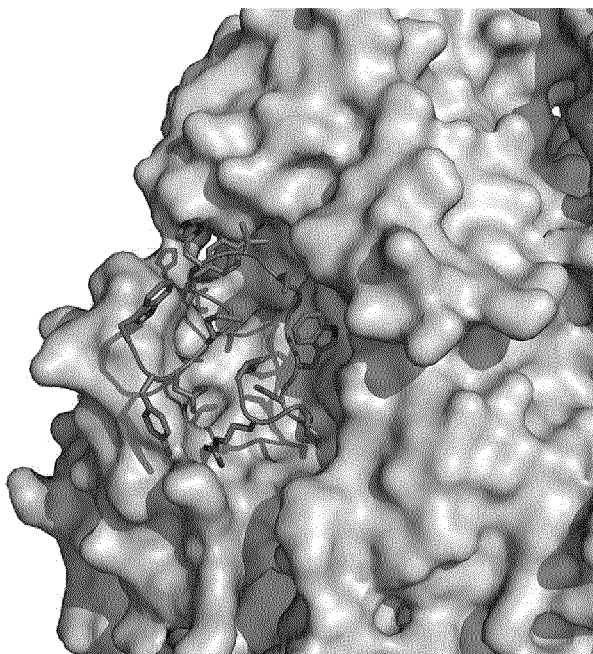


Figure 12

A



B

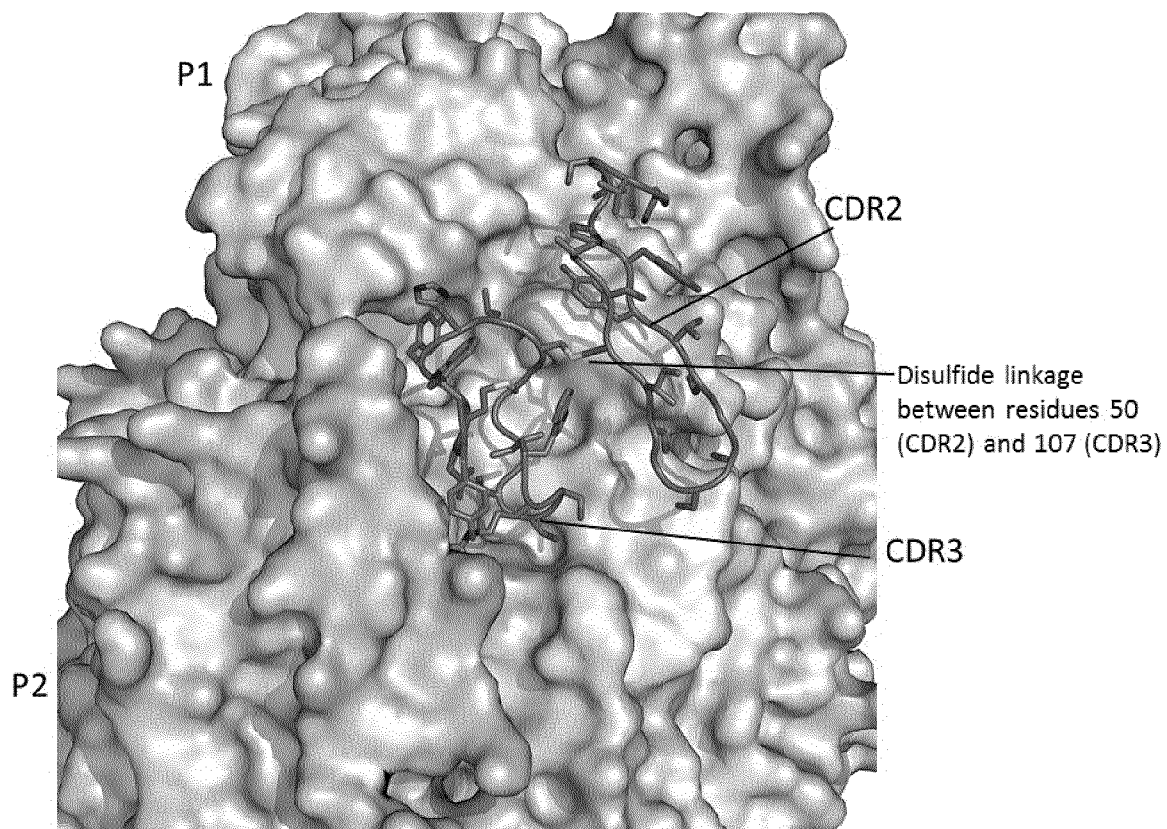


Figure 13

A

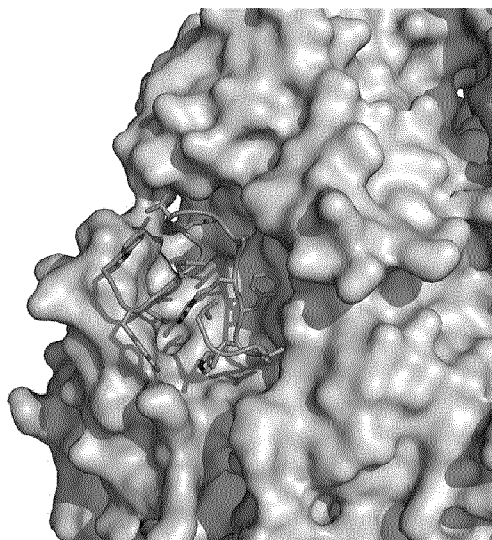


Figure 13

B

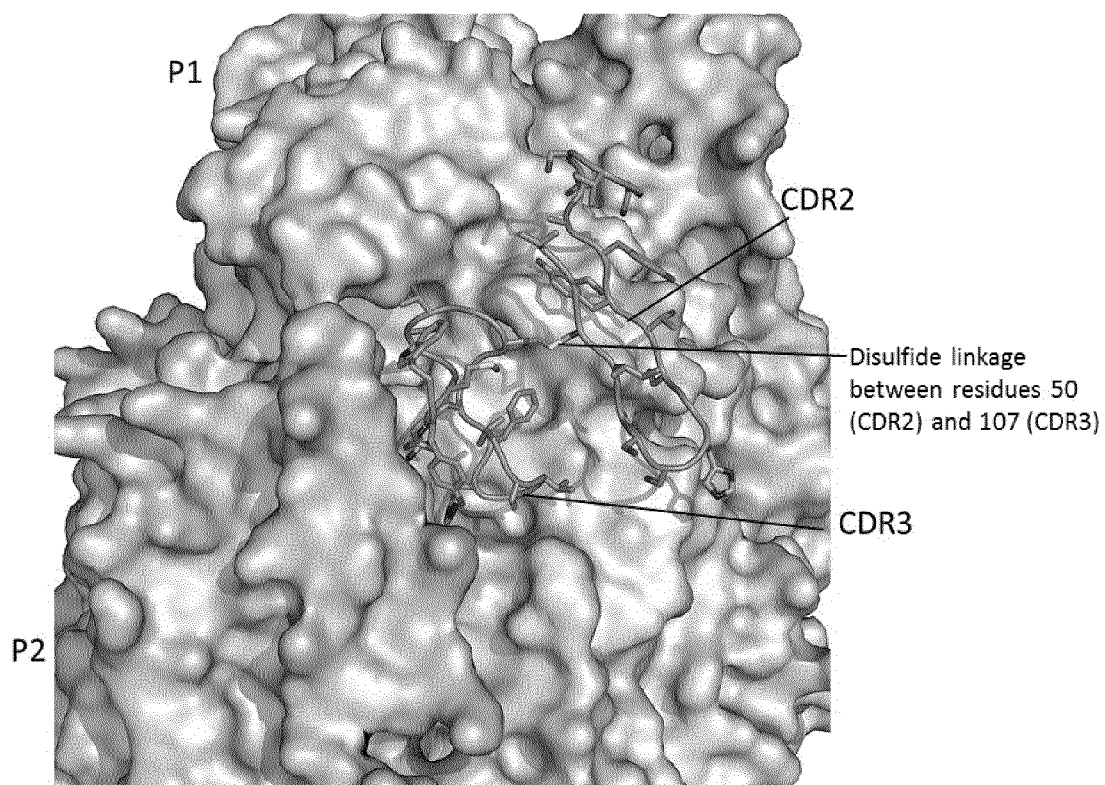


Figure 14

