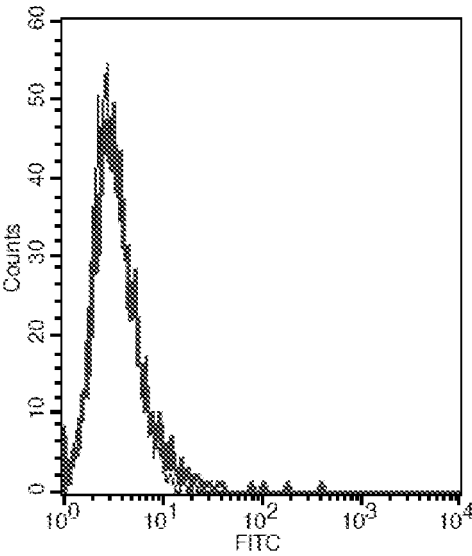
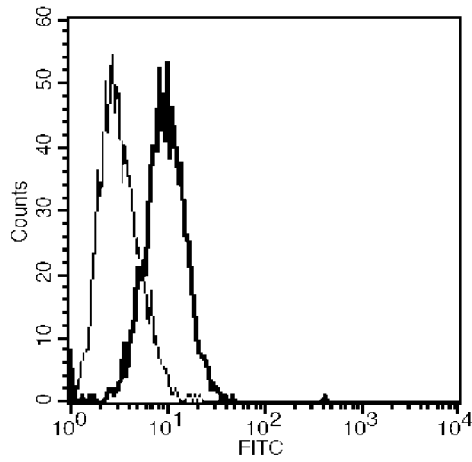


FIG. 1



A CHO cells



B CHO/PD-1 cells

FIG. 2

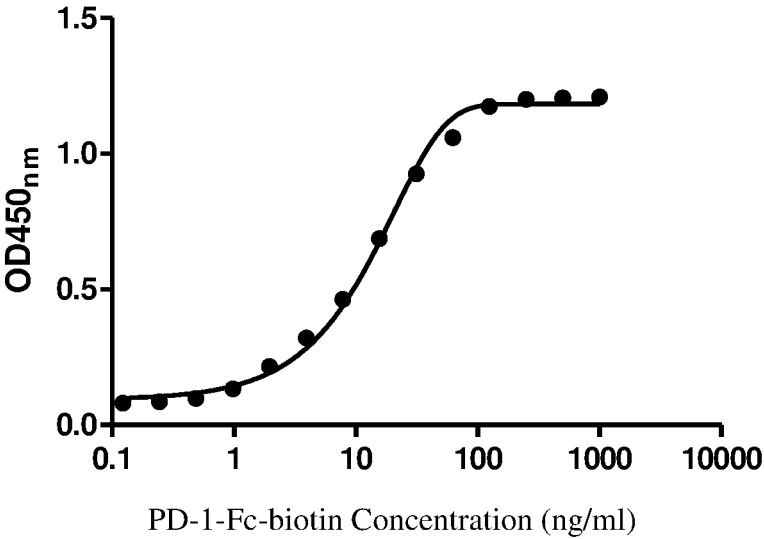


FIG. 3

A

	1	10	20	30	40	50	a	60	e ¹	
67D9VH	EVILVESGGGLVKPGGSLKVS CAASGFTFS 【TYGMS】 WVRQTPEKRLEWVA 【TISGGGRDTYYPD ^{e1}									
humIII	EVQLVESGGGLVQPGGSLRLS CAASGFTFS 【SYAMS】 WVRQAPGKGLEWVS 【VISGDGGSTYYAD ^{e1}									
hu67D9VH	----- 【T-G--】 -----A 【---G-RD---P- ^{e1}									
		70	80	abc	90	100	abc	110	e ¹	
67D9VH	TVKG】 RFTISRDN AKNTLYLQMS SLRSED TALYYCAR 【QDYGN YVWFAY】 WGQGT LVTVSA ^{e1}									
humIII	SVKG】 RFTISRDN SKNTLYLQMN SLRAED TAVYYCAR 【G-----FDY】 WGQGT LVTVSS ^{e1}									
hu67D9VH	T---】 -----S----- 【QDYGN YVW-A-】 ----- ^{e1}									

B

	1	10	20	27abcd	30	40	50	e ¹	
67D9VL	DIVLTQSPASLAVSLGQRATISC 【RASESVDSYGISFMH】 WFQQKPGQPPQLLIY 【STSNRGS】 G ^{e1}								
humKIII	DIVLTQSPASLAVSPGQRATITC 【RASESVSFLGINLIH】 WYQQKPGQPPKLLIY 【QASNKDT】 G ^{e1}								
hu67D9VL	-----S- 【-----DSY--SEM-】 -F-----Q---- 【ST--RGS】 - ^{e1}								
		60	70	80	90	100		e ¹	
67D9VL	VPARFSGSGSGTDFSLTIHPMEEDDTAMYFC 【QQSQEVFWT】 FGGG TKLEIKR ^{e1}								
humKIII	VPARFSGSGSGTDFSLTIHPVEANDTANYYC 【LQSKNFPWT】 FGQGT KVEIKR ^{e1}								
hu67D9VL	-----S-----D-----F- 【Q--QEV---】 ----- ^{e1}								

FIG. 4

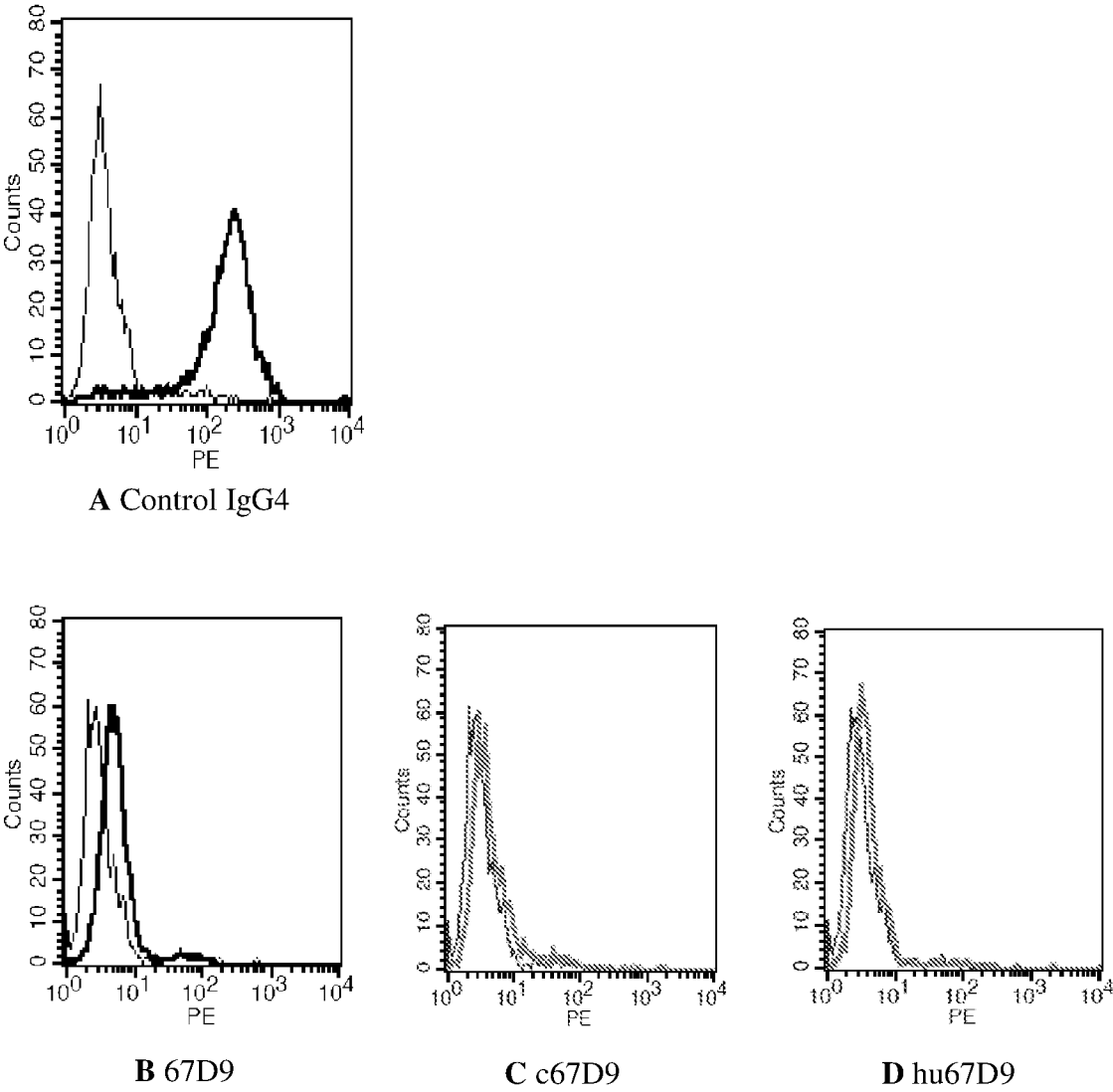


Fig. 5

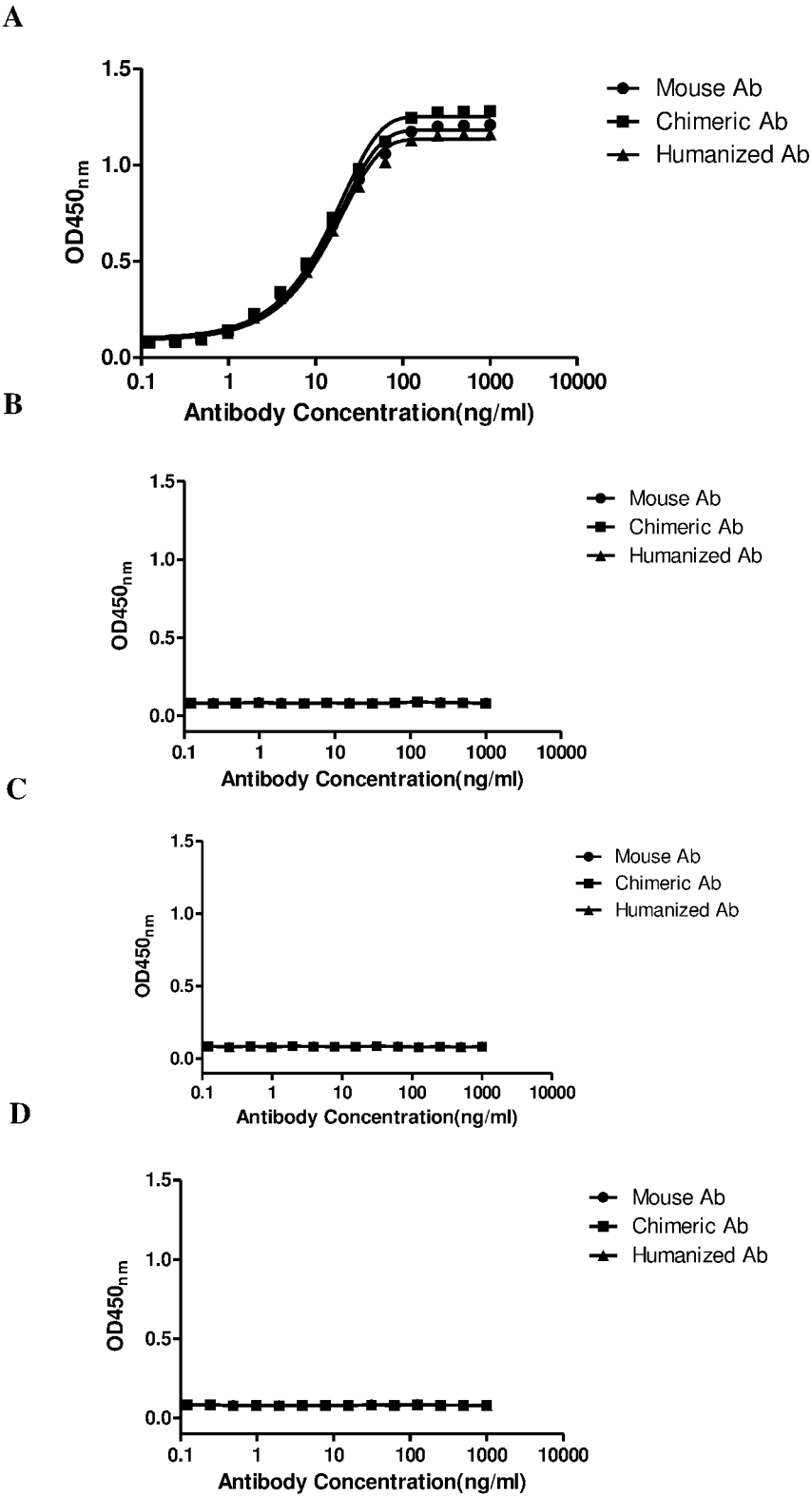


Fig. 6

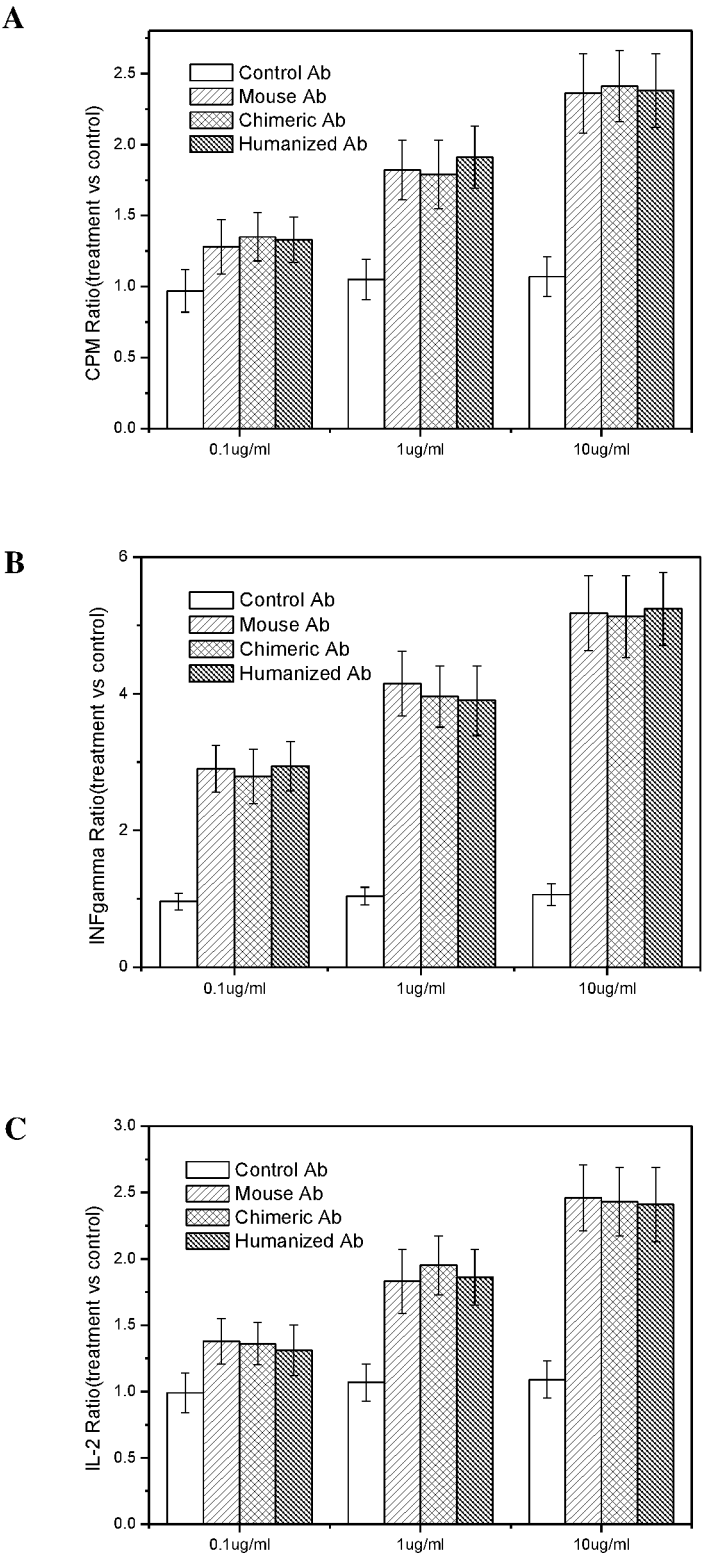


FIG. 7

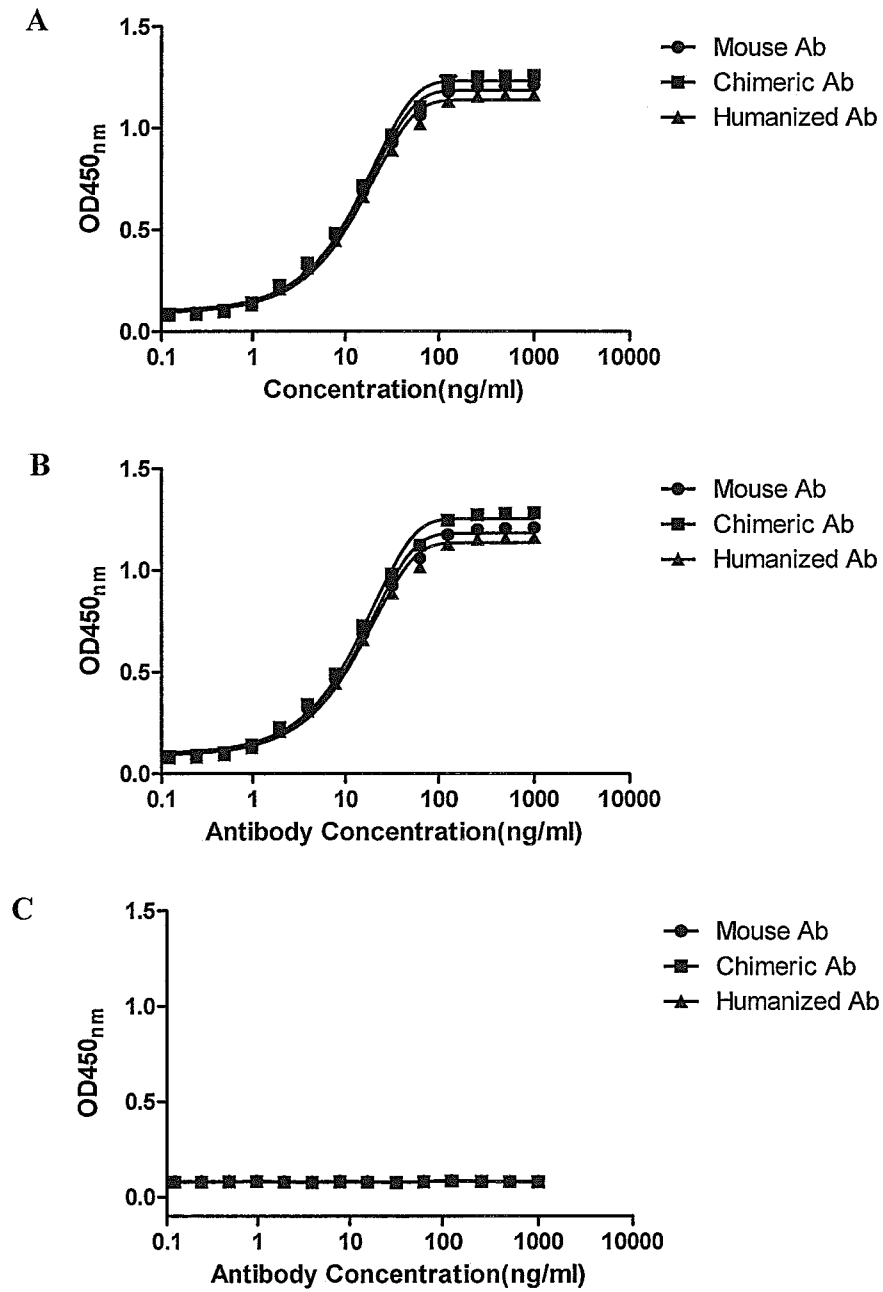
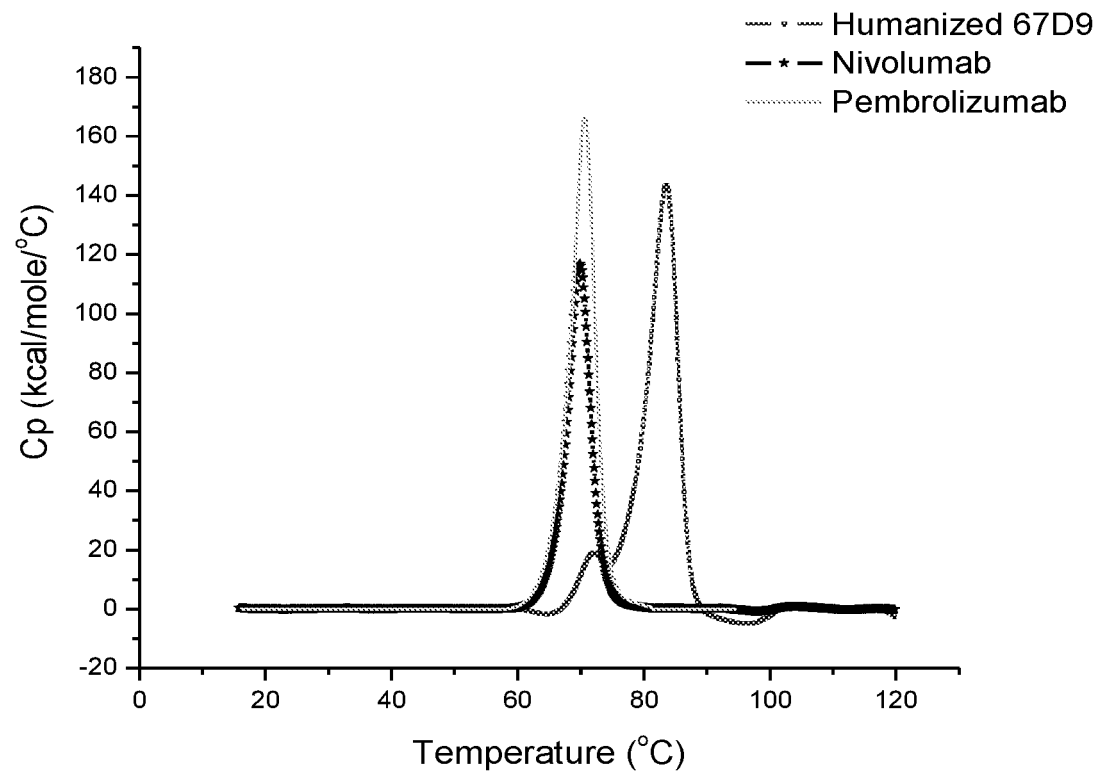


FIG. 8

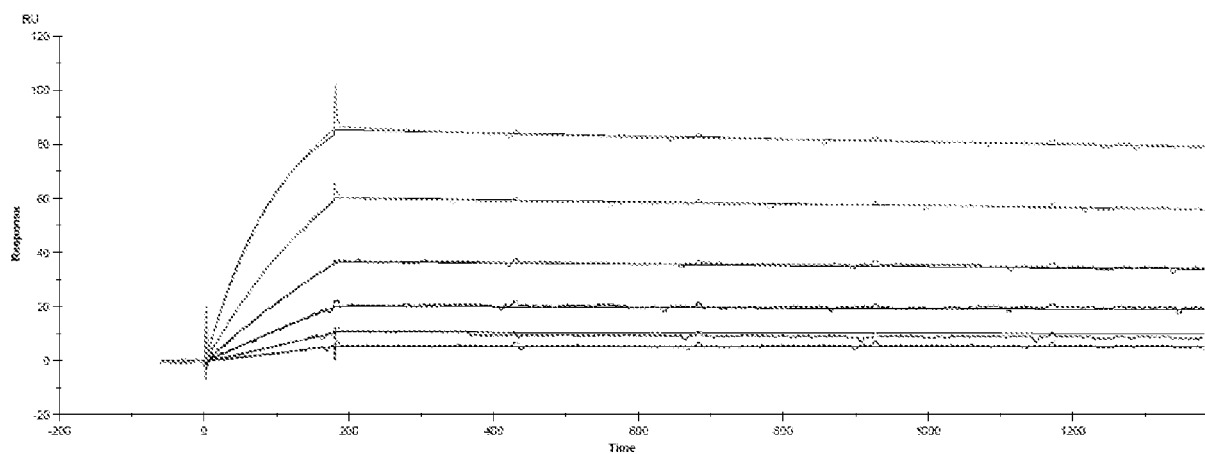


9/ 14

Fig 9

Kinetics: 'nivolumab', fit: '1: 1:1 Binding'

Curve: Fc=3-1 Ligand: PD1-Fc-biotin Sample: nivolumab Temp: 25°C



Kinetics: 'nivolumab', fit: '1: 1:1 Binding' (continued)

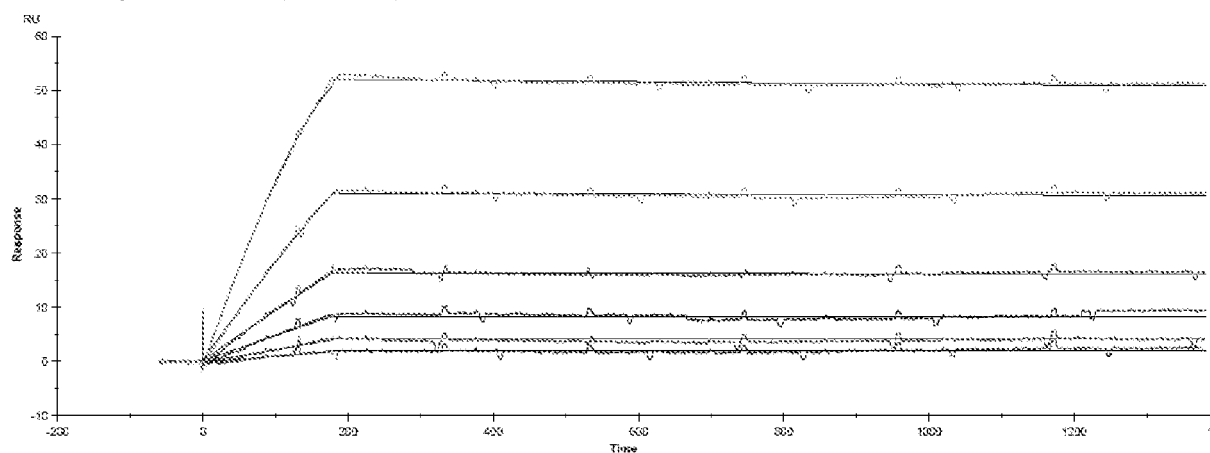
Report table

Curve	ka (1/Ms)	kd (1/s)	KD (M)	Rmax (RU)	Conc (M)	tc	Flow (ul/min)	kt (RU/Ms)	RI (RU)	Chi² (RU²)	U-value
	3.117E+6	6.586E-5	2.116E-11	102.5		1.696E+9				0.636	4
Cycle: 6: 0.015625 µg/ml					1.042E-10		30.00	5.259E+9	-0.2156		
Cycle: 7: 0.03125 µg/ml					2.083E-10		30.00	5.269E+9	-0.5464		
Cycle: 8: 0.0625 µg/ml					4.167E-10		30.00	5.259E+9	-0.5732		
Cycle: 9: 0.125 µg/ml					8.333E-10		30.00	5.259E+9	-0.9158		
Cycle: 10: 0.25 µg/ml					1.667E-9		30.00	5.269E+9	-1.562		
Cycle: 11: 0.5 µg/ml					3.333E-9		30.00	5.259E+9	-2.066		

A Kinetic analysis result of Nivolumab

Kinetics: 'hu67D9', fit: '1: 1:1 Binding'

Curve: Fc=3-1 Ligand: PD1-Fc-biotin Sample: hu67D9 Temp: 25°C



Kinetics: 'hu67D9', fit: '1: 1:1 Binding' (continued)

Report table

Curve	ka (1/Ms)	kd (1/s)	KD (M)	Rmax (RU)	Conc (M)	tc	Flow (ul/min)	kt (RU/Ms)	RI (RU)	Chi² (RU²)	U-value
	8.630E+6	2.770E-5	3.209E-12	59.59		4.653E+7				6.244	15
Cycle: 6: 0.015625 µg/ml					1.042E-10		30.00	1.446E+8	-0.2826		
Cycle: 7: 0.03125 µg/ml					2.083E-10		30.00	1.446E+8	-0.1872		
Cycle: 8: 0.0625 µg/ml					4.167E-10		30.00	1.446E+8	0.07475		
Cycle: 9: 0.125 µg/ml					8.333E-10		30.00	1.446E+8	0.1541		
Cycle: 10: 0.25 µg/ml					1.667E-9		30.00	1.446E+8	5.2953		
Cycle: 11: 0.5 µg/ml					3.333E-9		30.00	1.446E+8	-0.8663		

B Kinetic analysis result of hu67D9

FIG 10

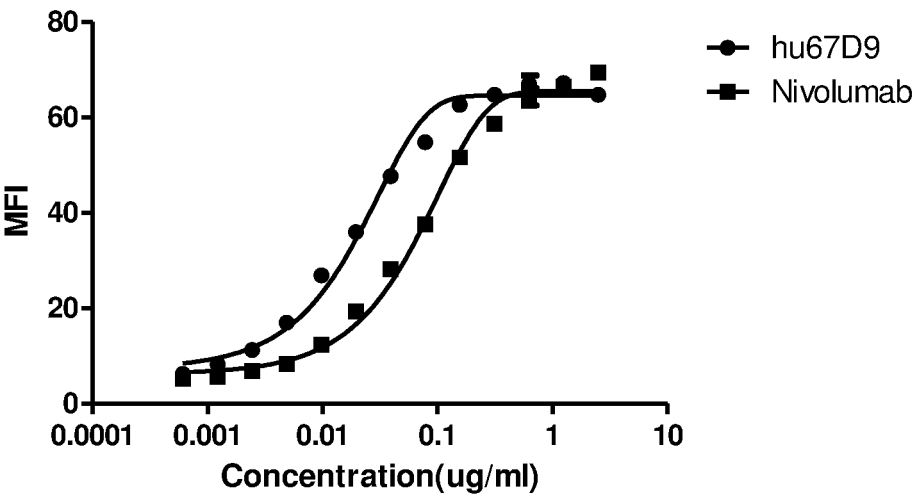
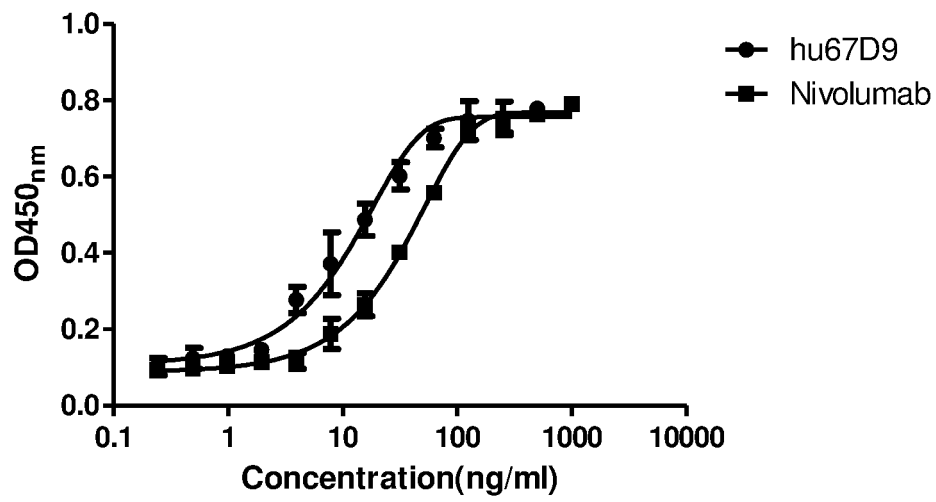


FIG 11



12/ 14

FIG 12

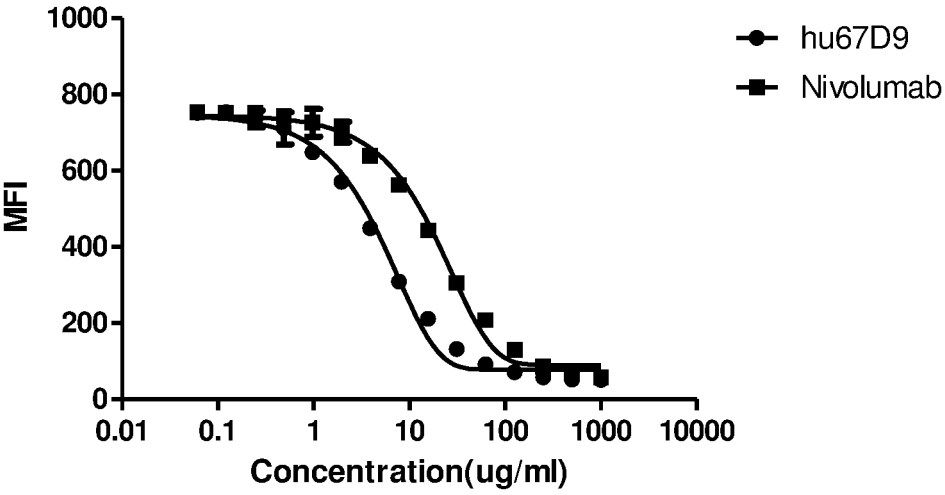


FIG 13

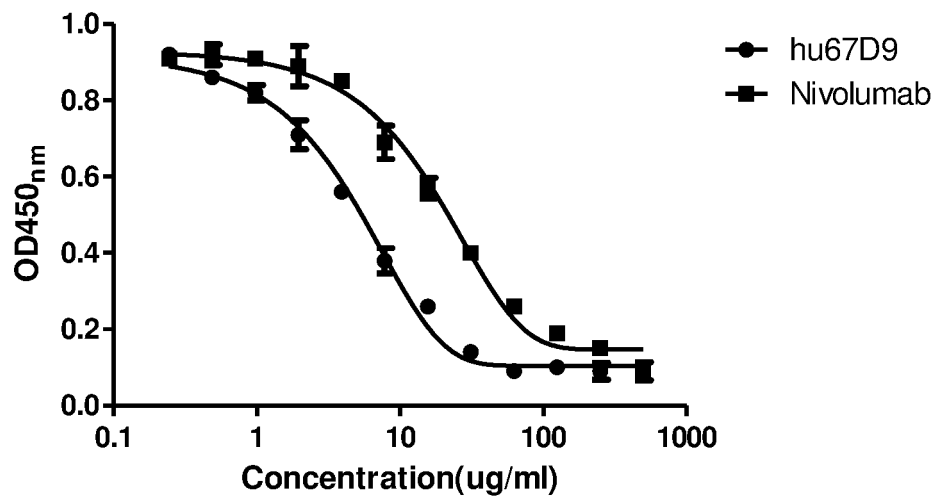


FIG 14

