

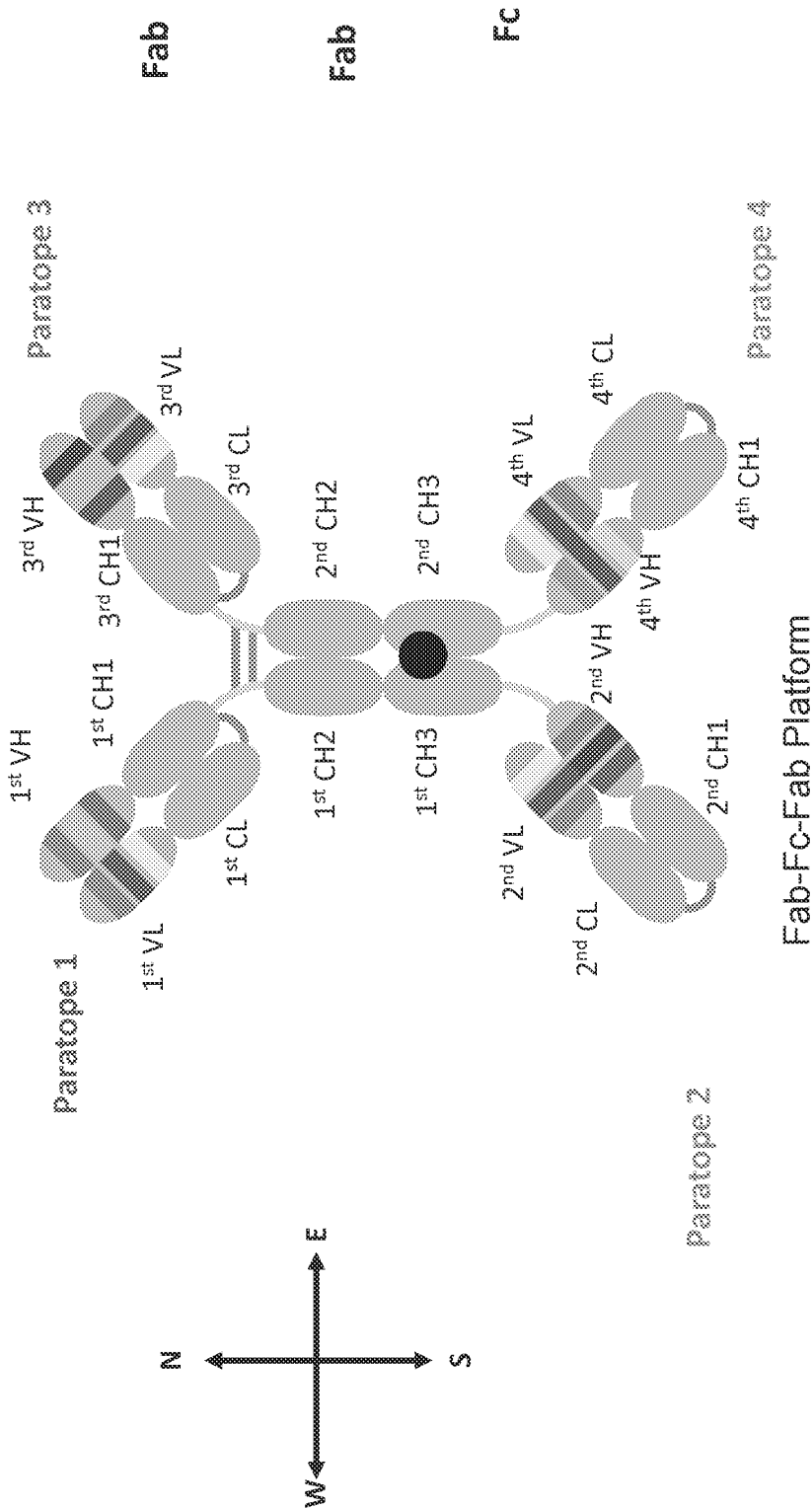
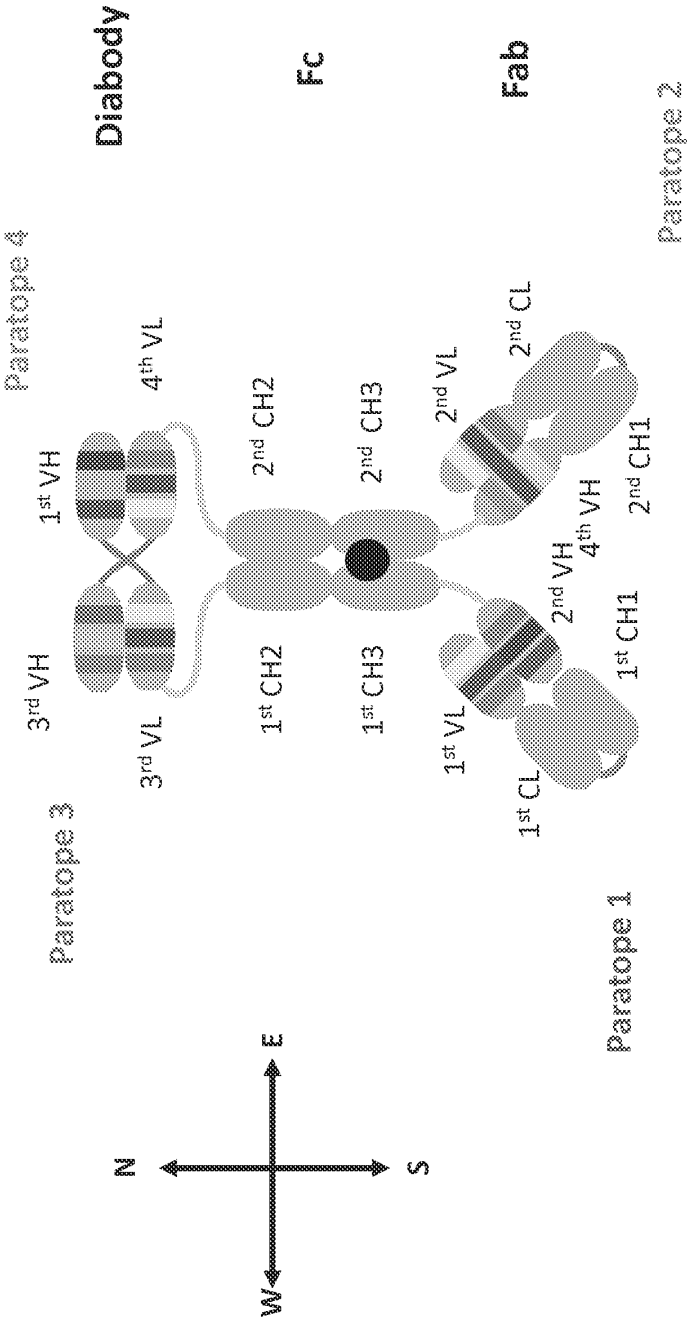
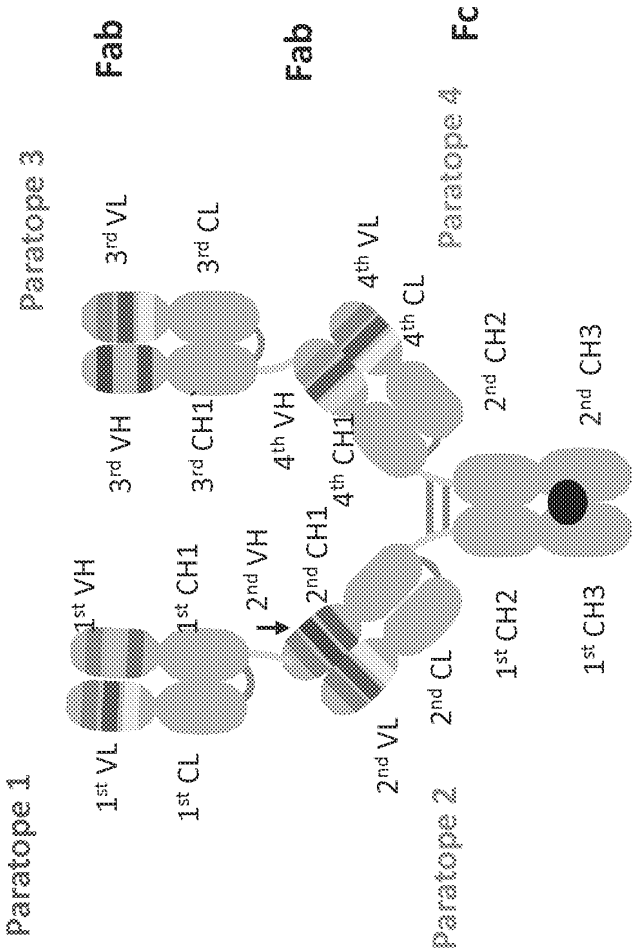


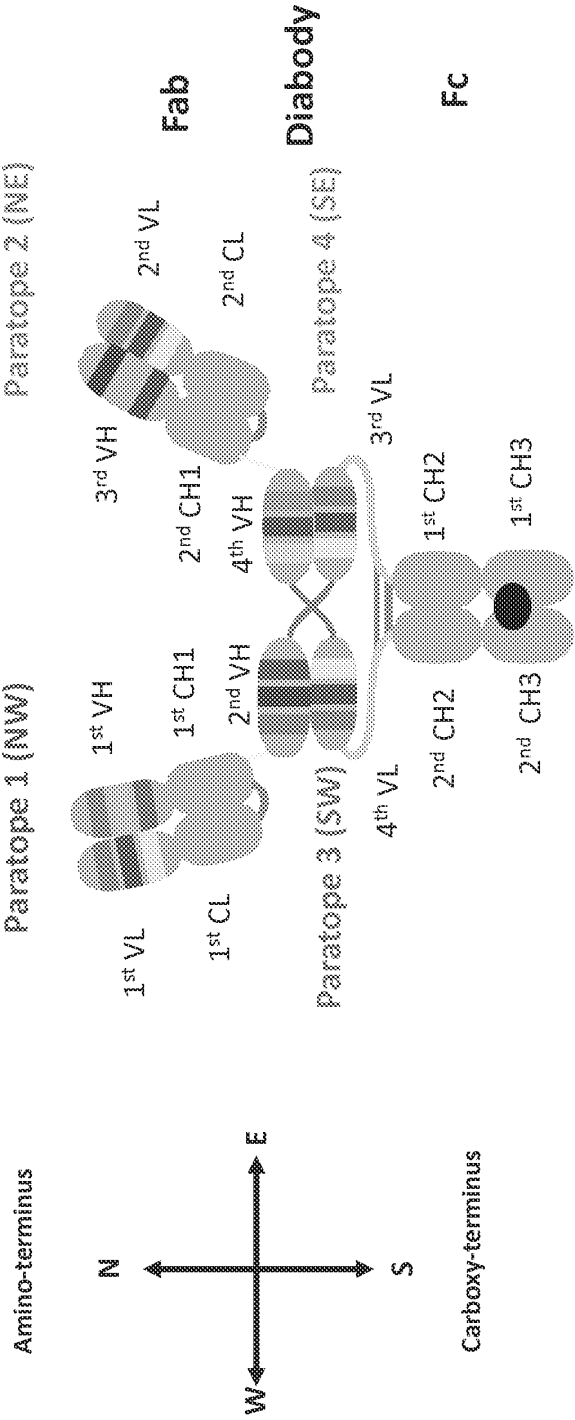
FIG. 1



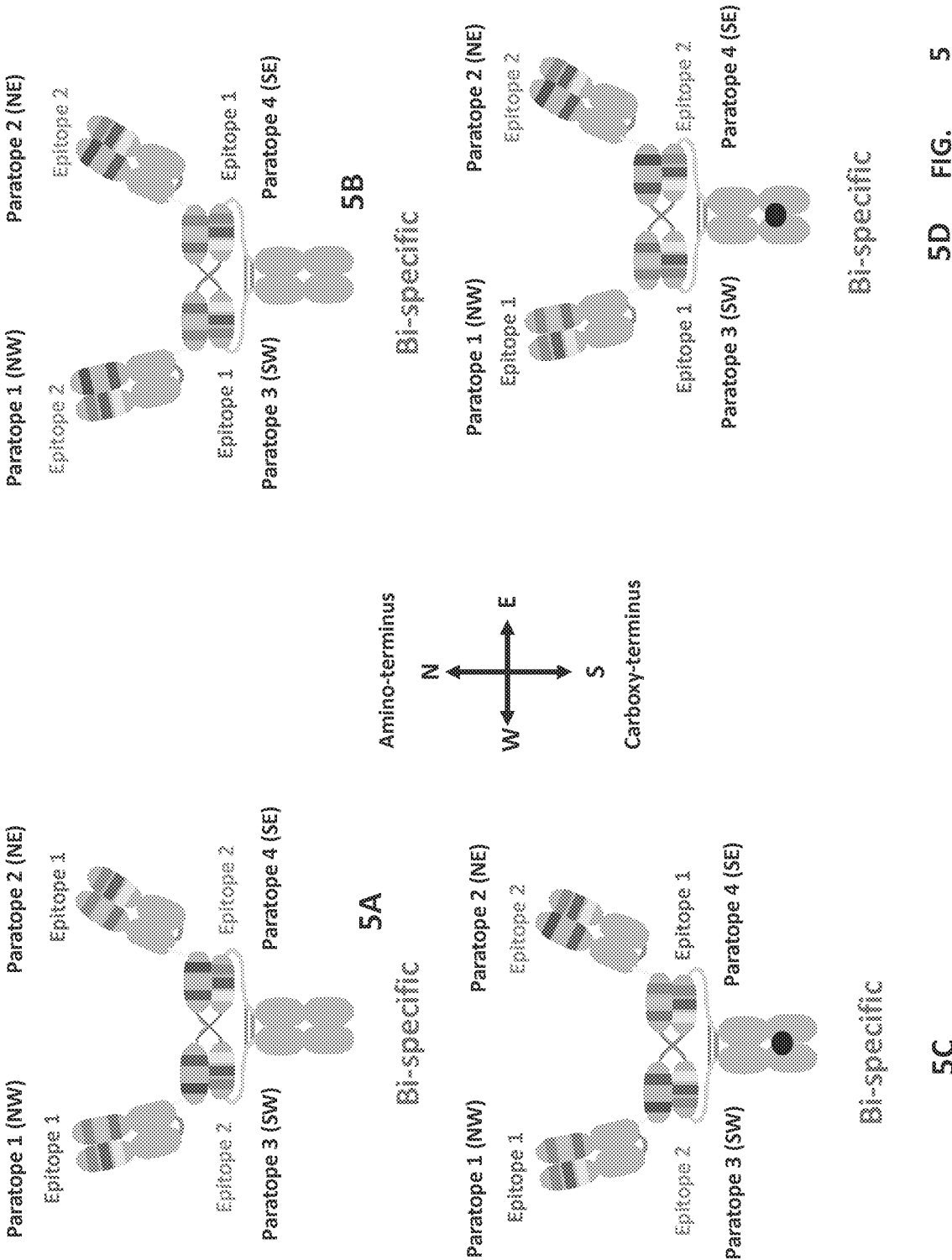
Diabody-Fc-Fab Platform



Fab-Fab-Fc Platform



Fab-Diabody-Fc Platform



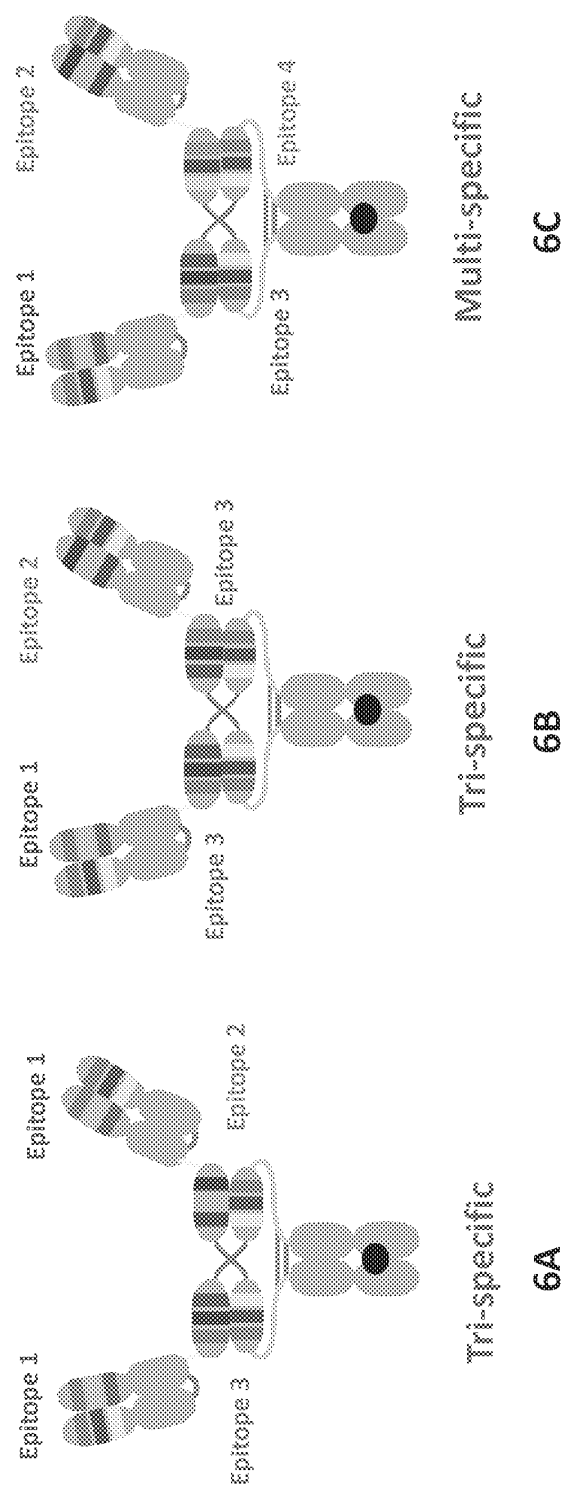


FIG. 6

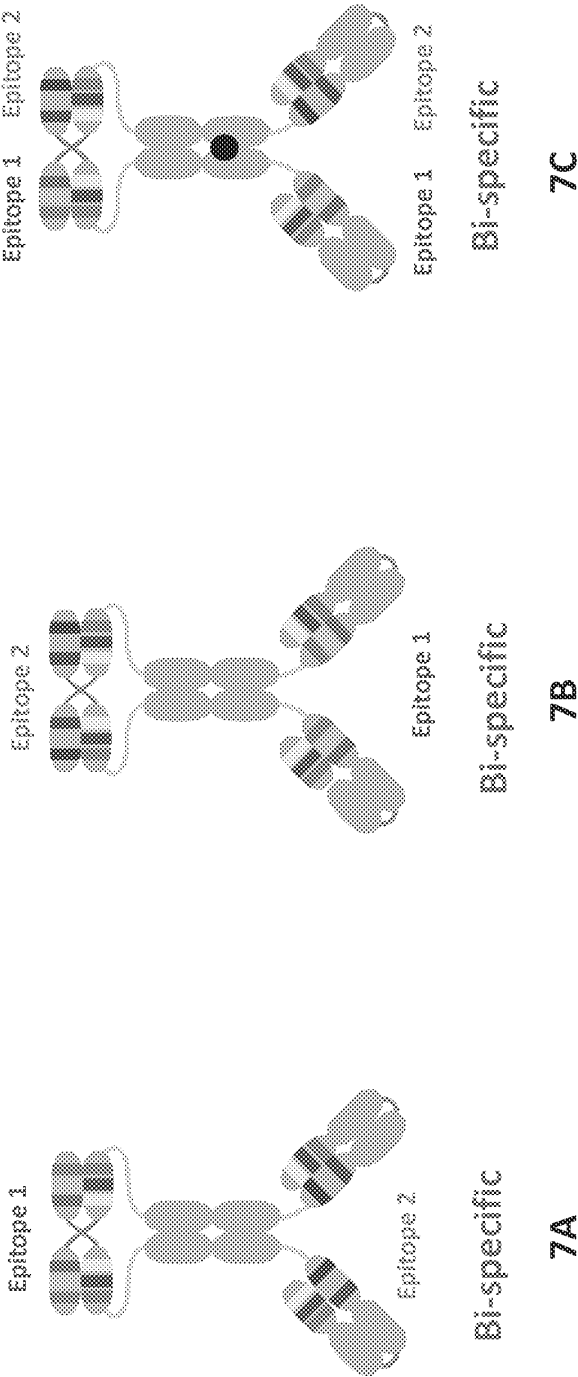


FIG. 7

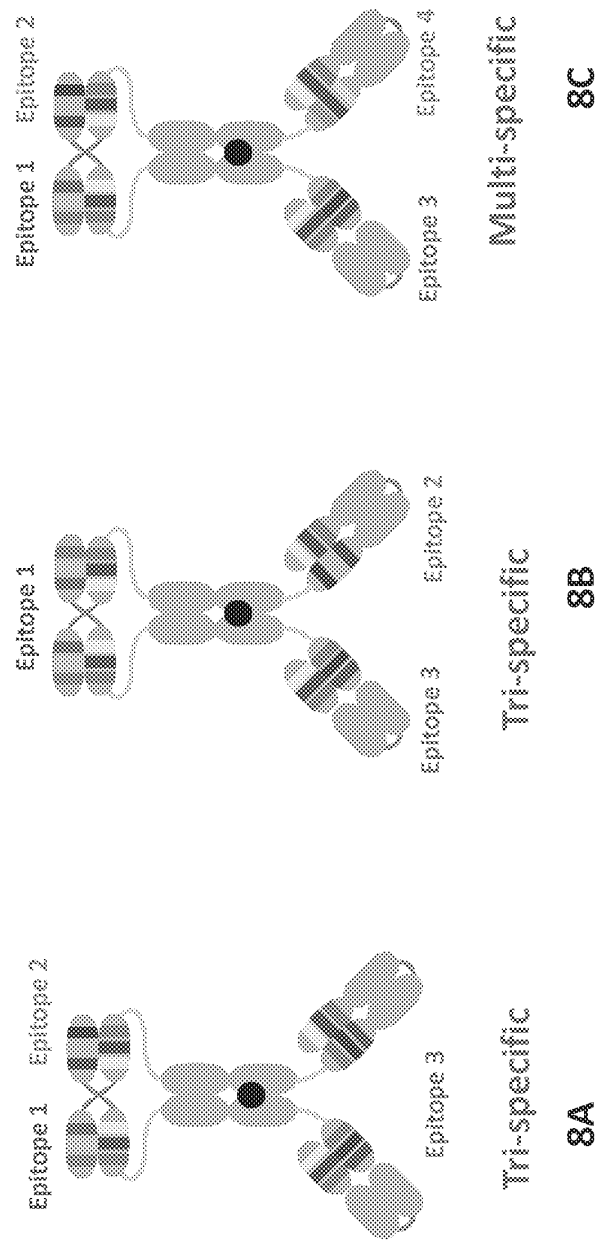
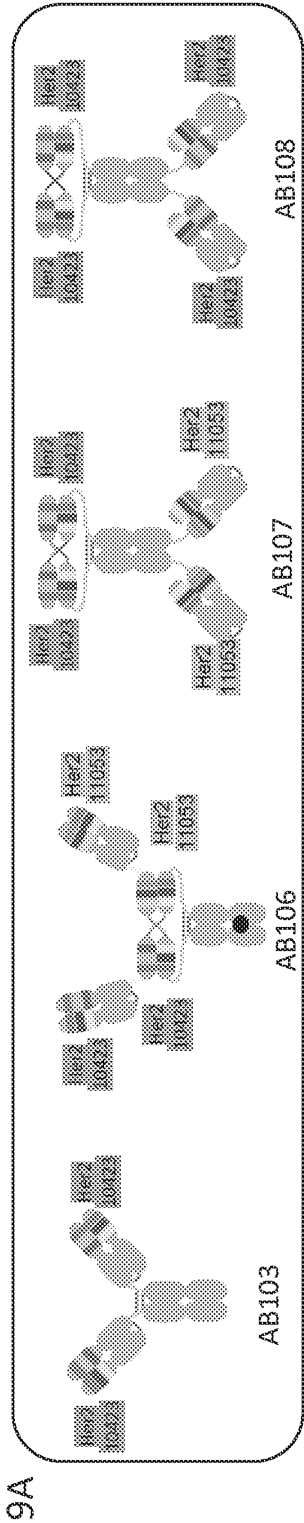


FIG. 8



9B

Biologic	Format	Yield (mg/L)	HPIC-SEC
AB103	IgG	200	single peak
AB106	Platform 4	180	single peak
AB107	Platform 2	212	single peak
AB108	Platform 2	196	single peak

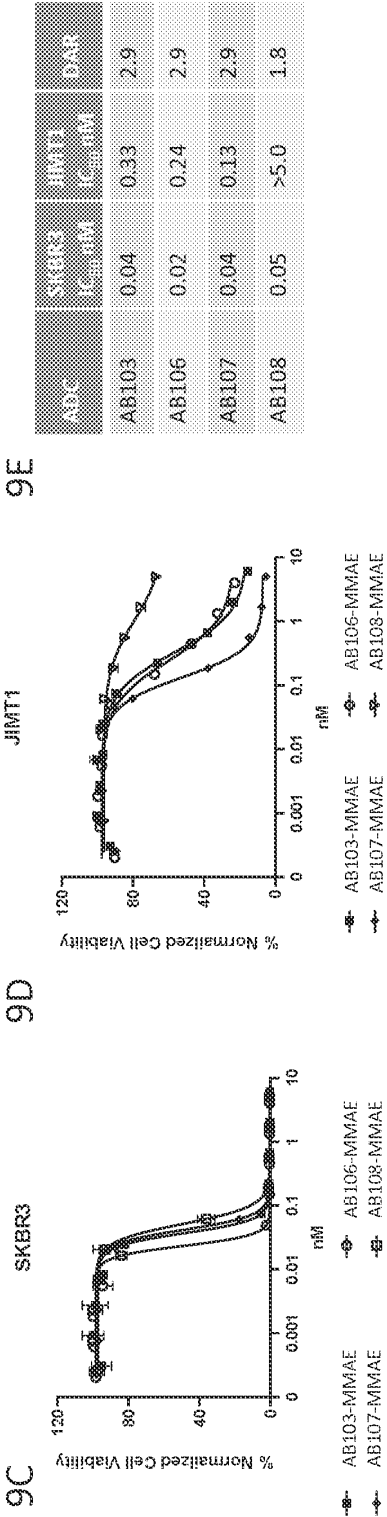


FIG. 9

Antibody	Target	Epitope	Affinity (nM)	CD30L Blockade	PD1/PD-L1 Function Blocking	ADC in vitro potency	
						Karpas 299 IC50 (nM)	
AB201 Brentuximab	CD30	N/A*	3.00**	+++	N/A*	0.024	
AB217	CD30	N/A*	3.00**	+++	N/A*	0.013	
Avelumab	PD-L1	1	0.96***	N/A*	+++	7.500	
AB202	PD-L1	1	1.02***	N/A*	+++	2.400	
Atezolizumab	PD-L1	2	1.51***	N/A*	++++	1.600	
AB203	PD-L1	2	3.06***	N/A*	++++	0.760	
BMS-936559	PD-L1	3	1.88***	N/A*	+++	0.040	
AB204	PD-L1	3	1.99***	N/A*	+++	0.140	

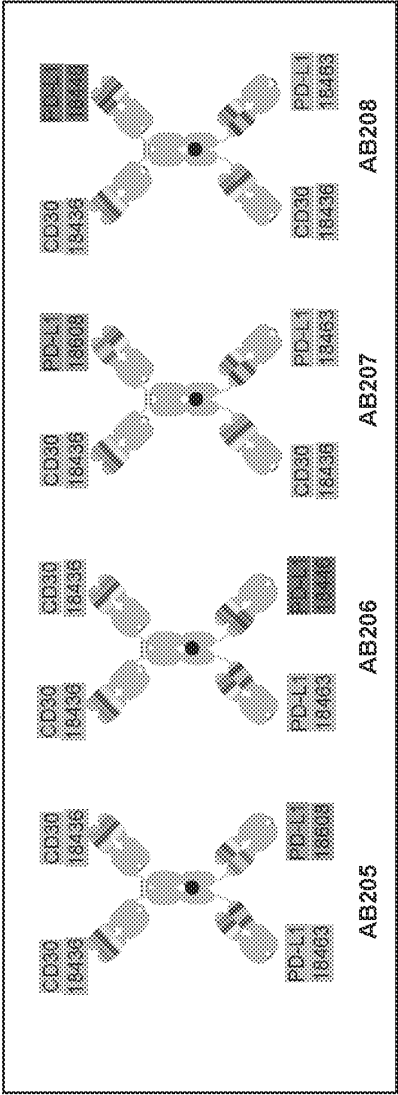
*N/A = not applicable

**cellular affinity

***biochemical affinity

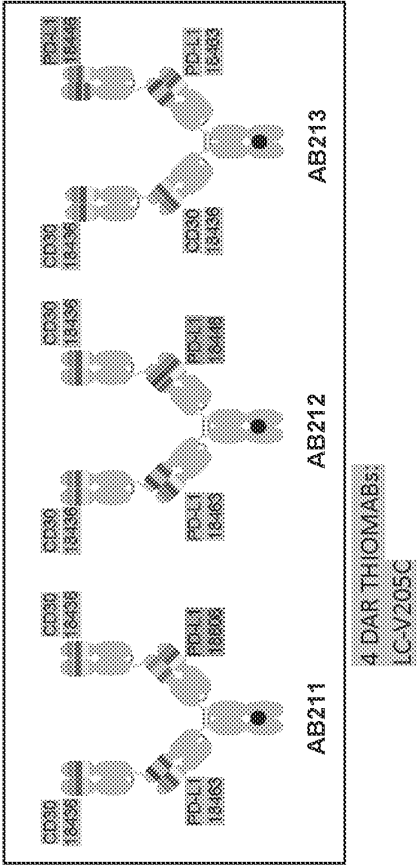
FIG. 10

Platform 1:
IgG-Fab (Fab-Fc-Fab)



4 DAR THIONABs: LC-V205C

Platform 3:
Fab-IgG (Fab-Fab-Fc)



Platform 2:
Diabody-FC-Fab (DFF)

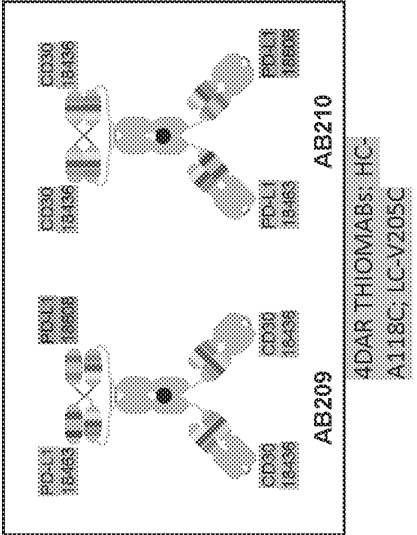
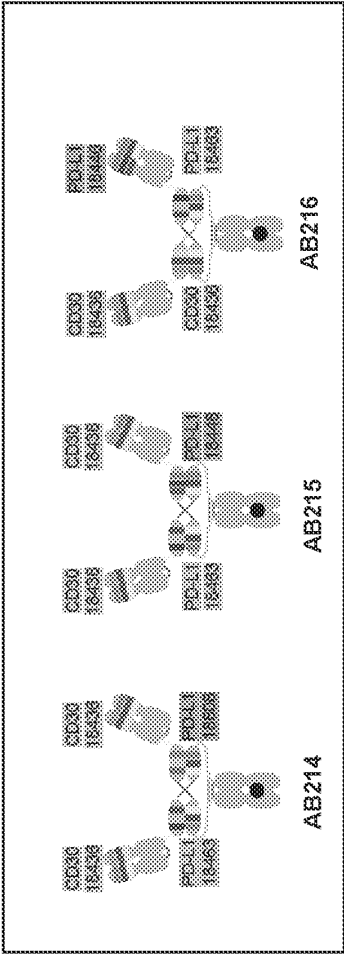


FIG. 12

Platform 4:
Fab-Diabody-Fc (FDF)



4 DAR TH10MABs:
HC-A118G, LC-V205C

Biologic	Format	% Monomer	% Aggregation	% LMW*
AB201	IgG	90.70	9.30	None
AB205	Platform 1	93.40	None	6.60
AB206	Platform 1	92.90	None	7.10
AB207	Platform 1	92.78	None	7.72
AB208	Platform 1	98.27	1.73	None
AB209	Platform 2	98.42	1.58	None
AB210	Platform 2	97.57	2.43	None
AB211	Platform 3	86.95	None	13.05
AB212	Platform 3	90.01	None	9.99
AB214	Platform 4	94.17	5.83	None
AB215	Platform 4	94.10	5.90	None

*LMW = Low Molecular Weight Species

FIG. 14

Karpas 299 Cellular Binding (FACS) Summary

Biologic	Format	Karpas 299 EC50 (nM)
AB201	IgG	0.16
AB205	Platform 1	0.55
AB206	Platform 1	0.51
AB207	Platform 1	0.35
AB208	Platform 1	0.12
AB209	Platform 2	0.81
AB210	Platform 2	0.53
AB211	Platform 3	0.45
AB212	Platform 3	0.53
AB214	Platform 4	0.23
AB215	Platform 4	0.60

ABC	CD30 +ve Cells IC ₅₀ nM	PD-L1 +ve Cells IC ₅₀ nM
AB201	0.07	>10
AB204	>10	0.07
AB-205	0.09	0.27
AB-208	0.03	0.06
AB209	0.09	0.16
AB212	0.05	0.11
AB215	0.06	0.14
AB213	0.08	0.16
AB216	0.07	0.21

FIG. 16

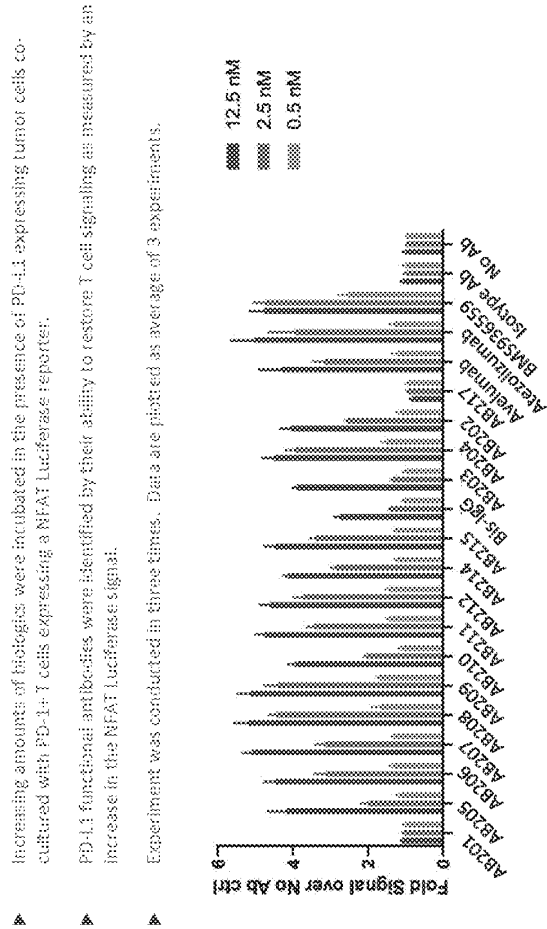
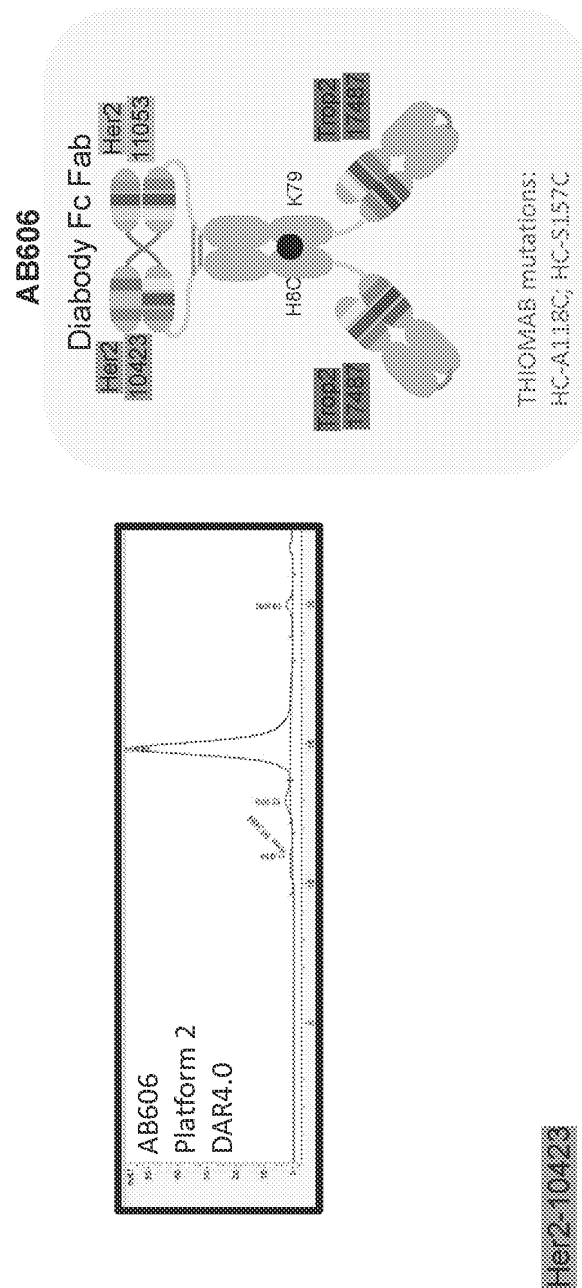


FIG. 17



४१

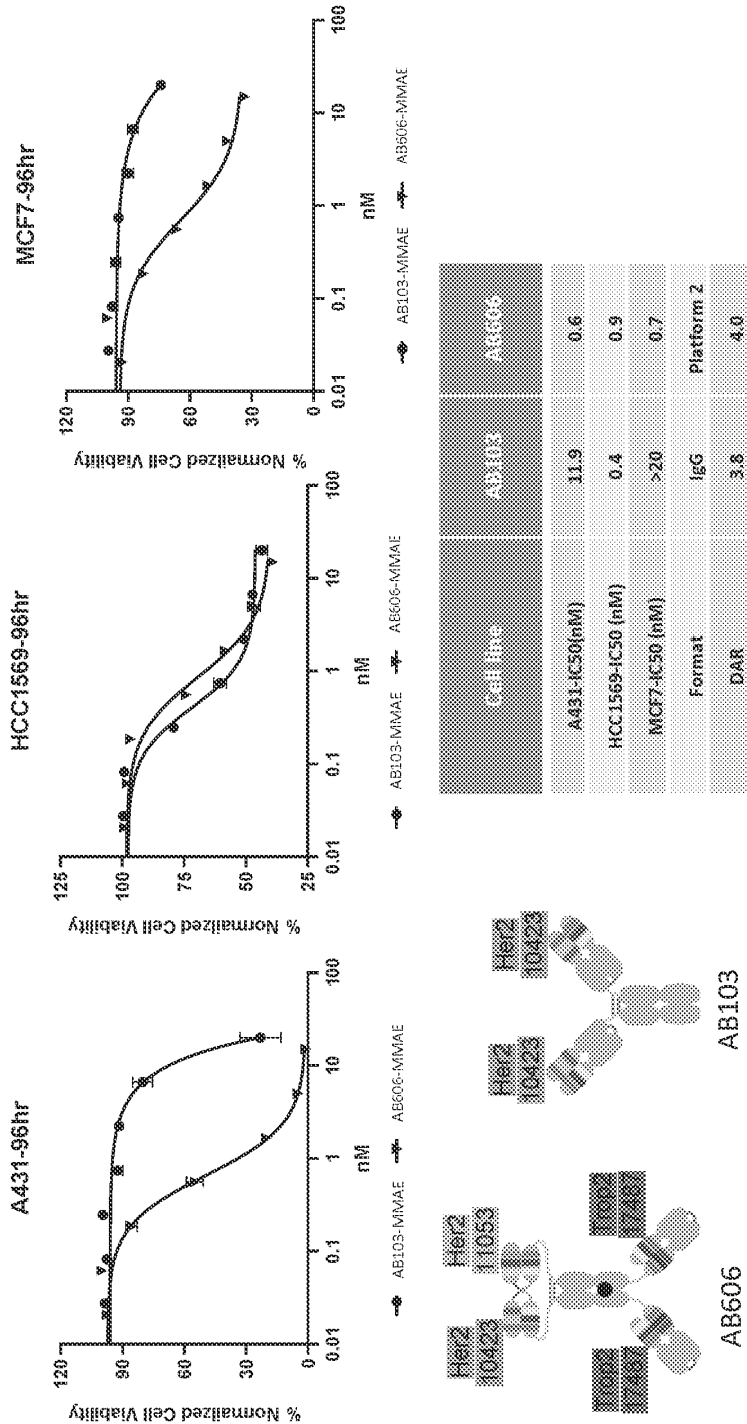


FIG. 19

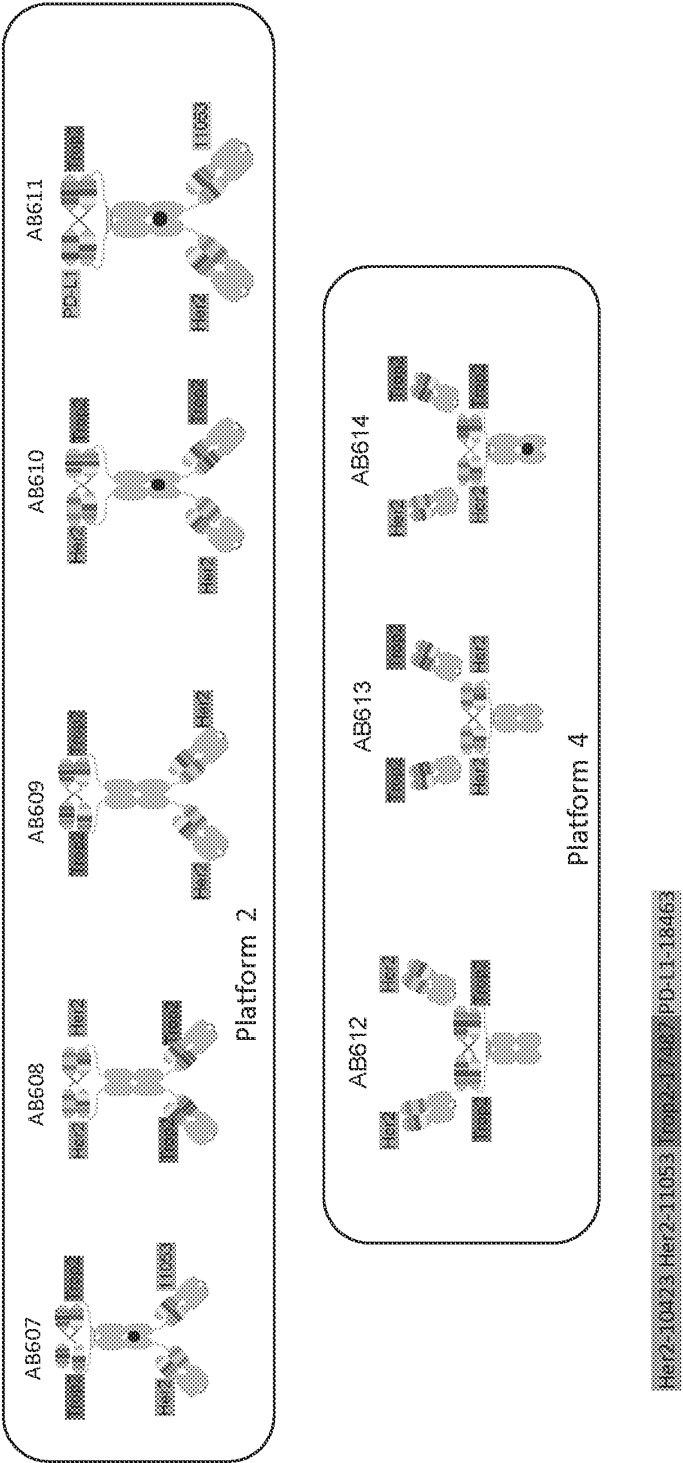
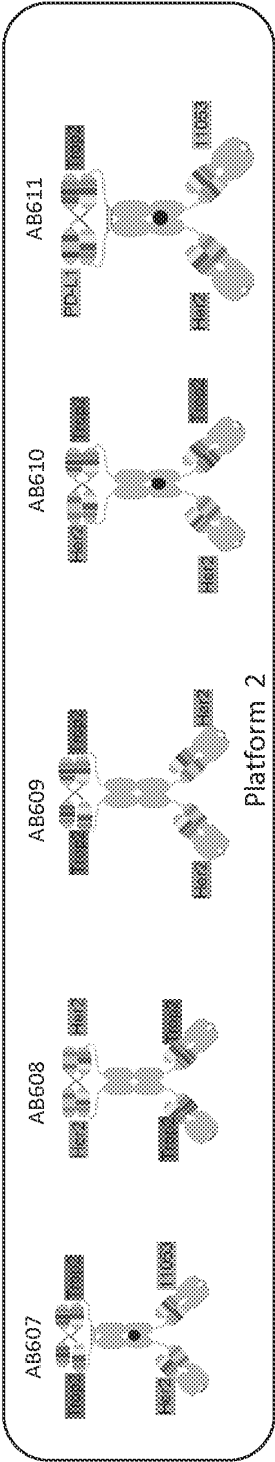
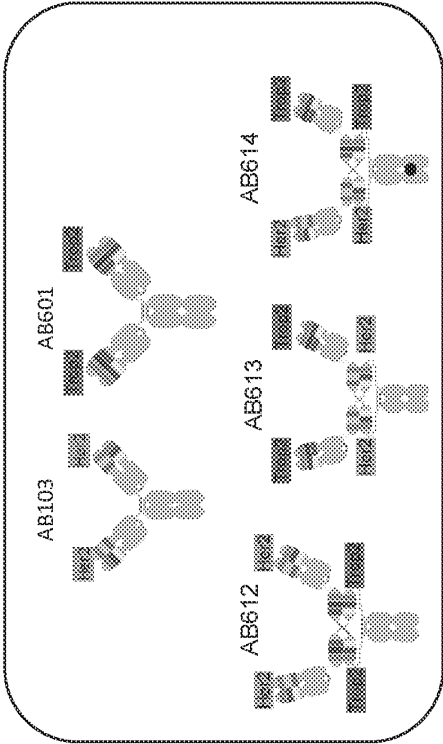


FIG. 20



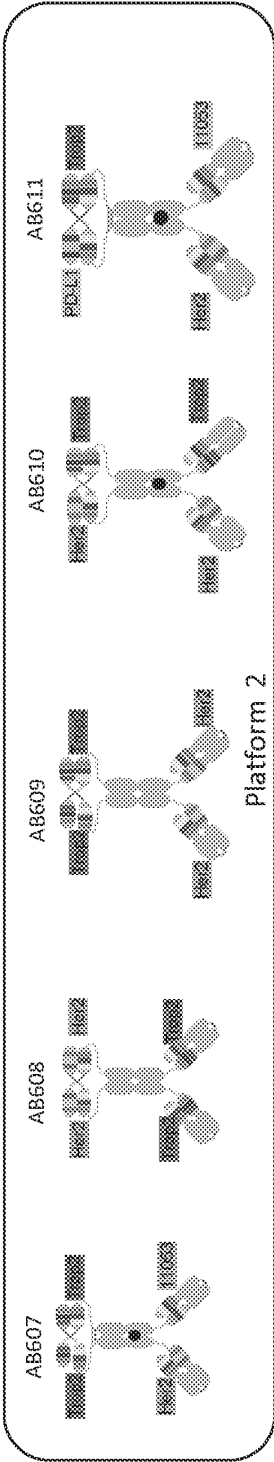
Biologic	Format	SKOV3 IC50 (nM)
AB103	IgG	0.07
AB601	IgG	0.13
AB607	Platform 2	0.21
AB608	Platform 2	0.12
AB609	Platform 2	0.09
AB610	Platform 2	0.15
AB611	Platform 2	0.20

FIG. 21



Biologic	Format	SKOV3 IC50 [nM]
AB103	IgG	0.07
AB601	IgG	0.13
AB612	Platform 4	0.05
AB613	Platform 4	0.08
AB614	Platform 4	0.04

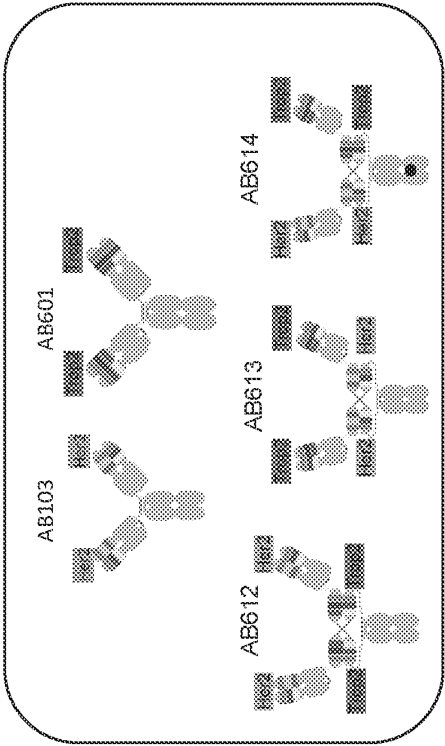
FIG.22



Biologic	Format	HM11 IC50 (nM)
AB103	IgG	0.21
AB501	IgG	0.01
AB607	Platform 2	0.08
AB608	Platform 2	0.12
AB609	Platform 2	0.08
AB610	Platform 2	0.07
AB611	Platform 2	0.11

FIG. 23

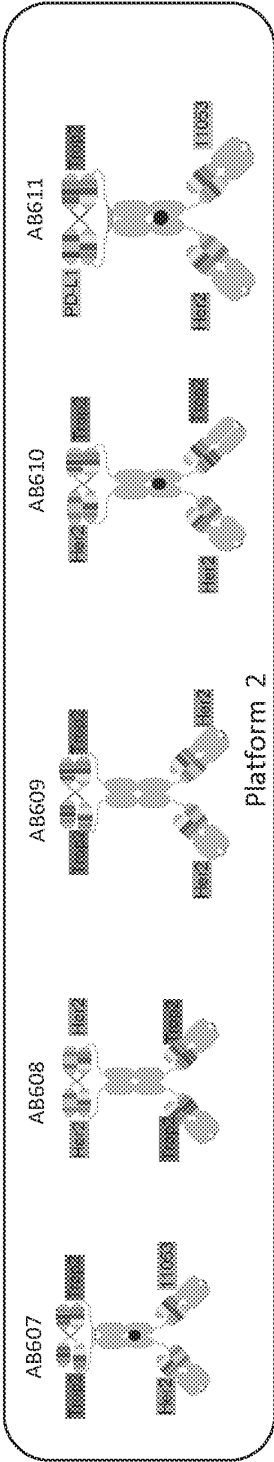
In Vitro Cell Potency in JIMT1: Platform 4 Format



Biologic	Format	JIMT1 IC50 (nM)
AB103	IgG	0.21
AB601	IgG	0.01
AB612	Platform 4	0.07
AB613	Platform 4	0.01
AB614	Platform 4	0.03

FIG. 24

In Vitro Cell Potency in OVCAR3: Platform 2 Format

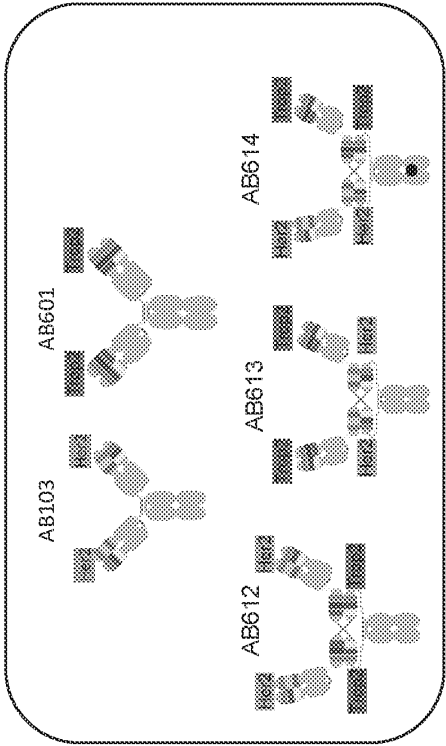


Biologic	Format	OVCAR3 IC50 (nM)
AB103	IgG	>5
AB601	IgG	0.71
AB607	Platform 2	0.37
AB608	Platform 2	1.84
AB609	Platform 2	3.38
AB610	Platform 2	1.86
AB611	Platform 2	0.63

Cell potency driven by TROP2

FIG. 25

In Vitro Cell Potency in OVCAR3: Platform 4 Format



Biologic	Format	OVCAR3 IC50 (nM)
AB103	IgG	>5
AB601	IgG	0.71
AB612	Platform 4	>3
AB613	Platform 4	0.32
AB614	Platform 4	0.29

FIG. 26

FIG. 27
All ADCs Exhibit Uniform 4 DAR via THIOMAB Conjugation

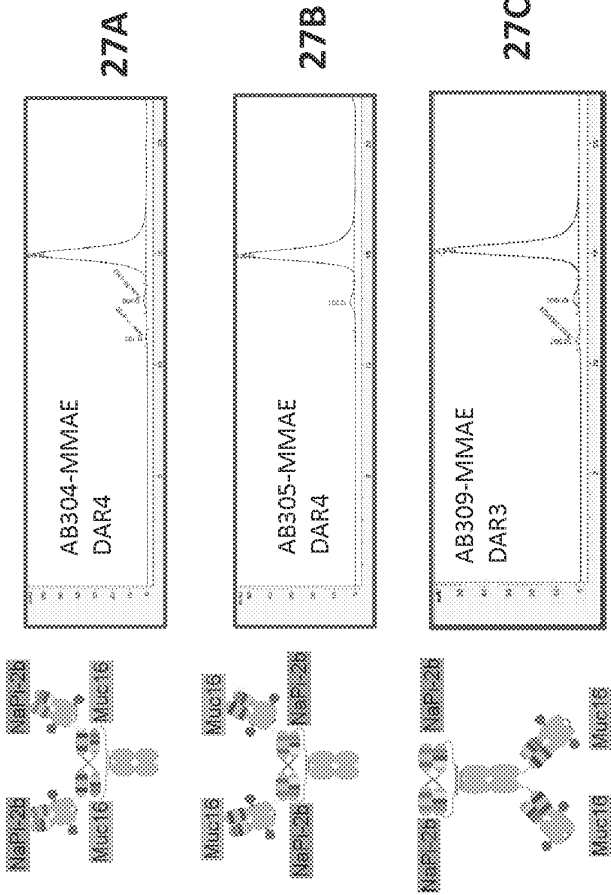


FIG. 28

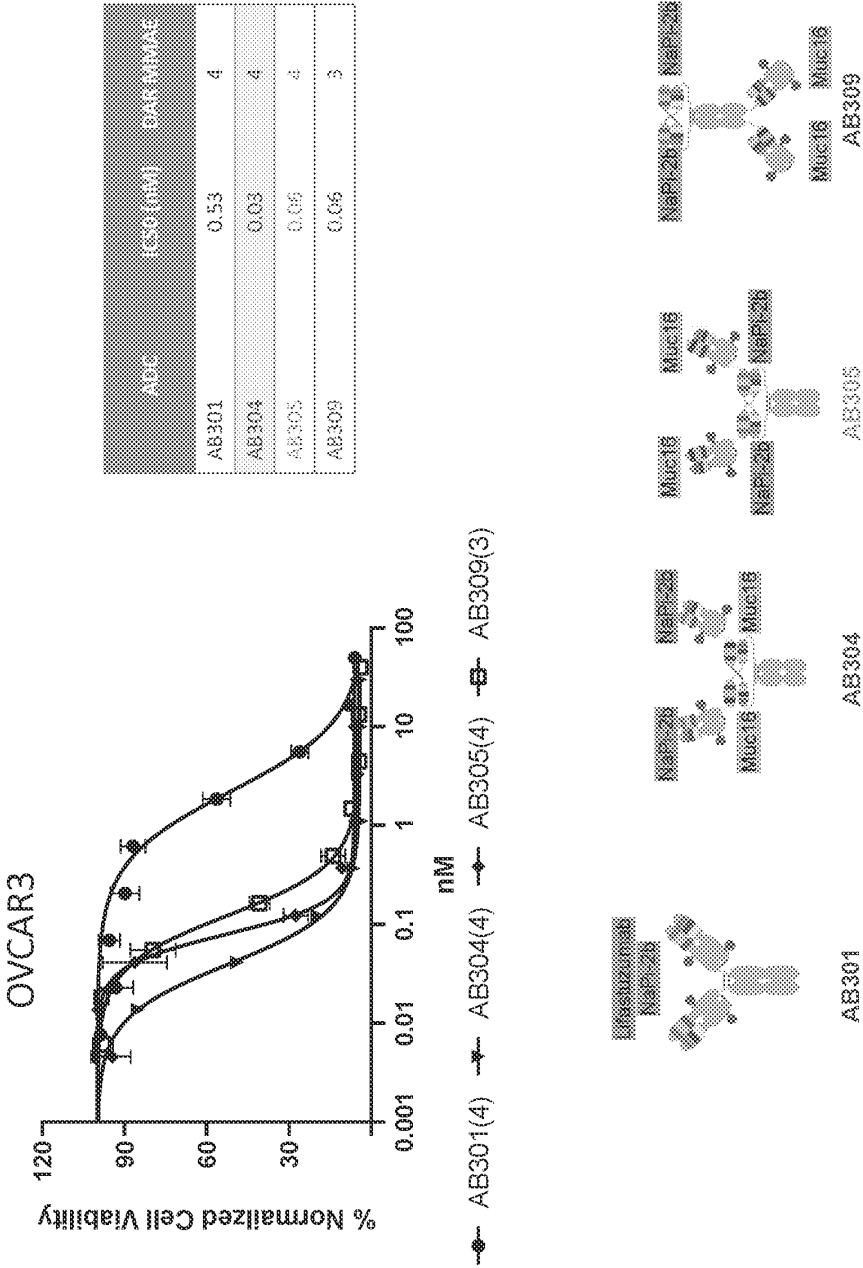


FIG. 29

OVCAR3-AV (Engineered Cell Line with lower Muc16 levels)

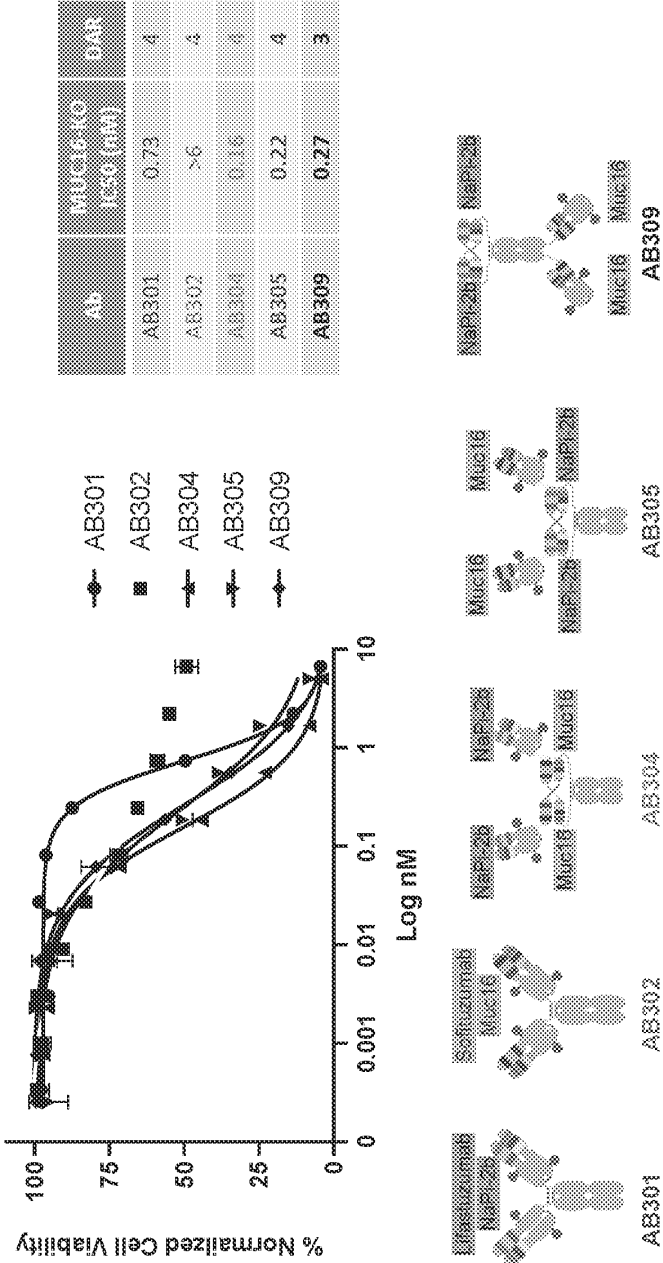


FIG. 30

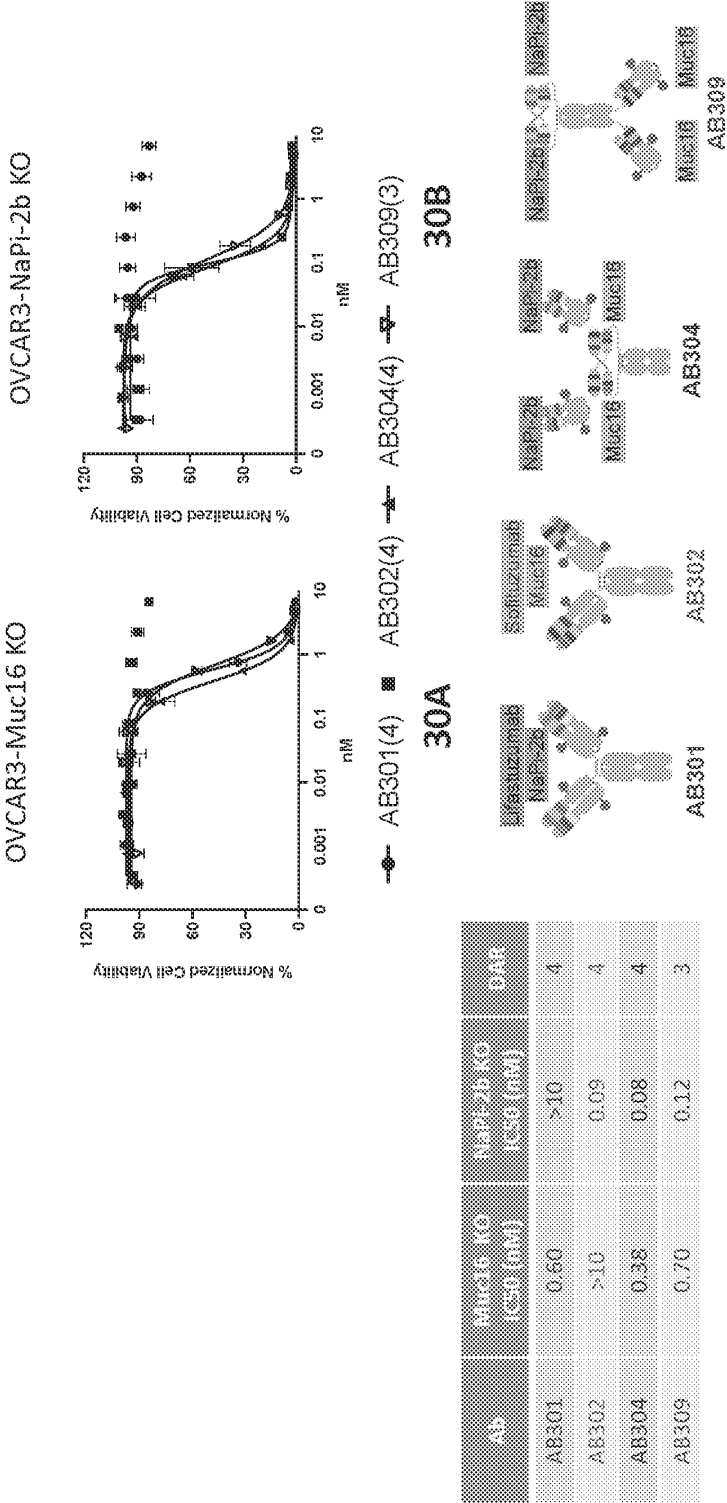
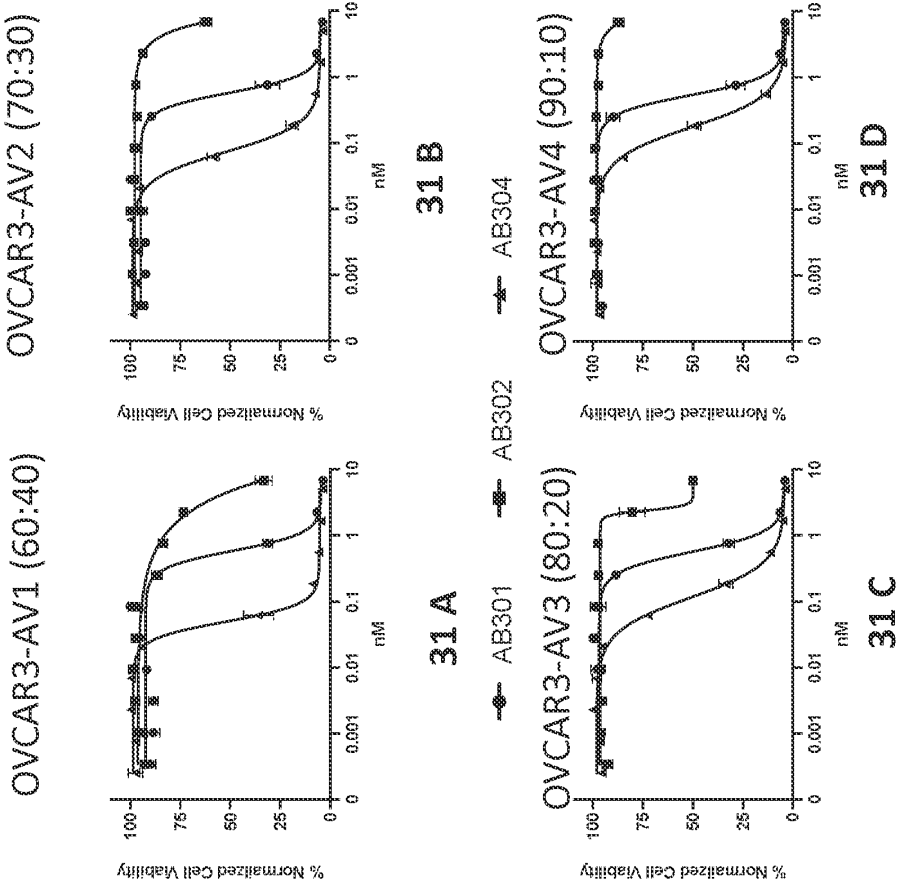
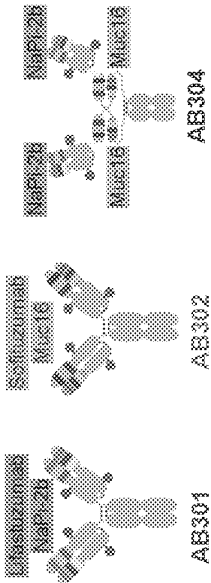


FIG. 31



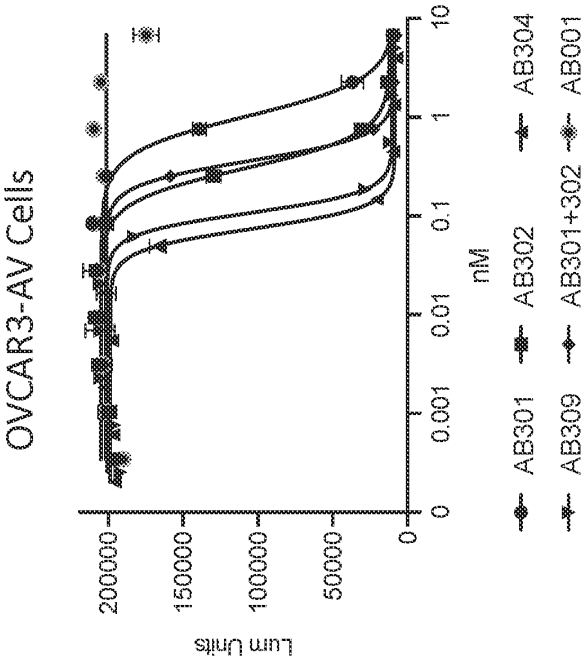
Ratio Muc16KO:OVCAR3					
ADC	50:40 IC50 (nM)	70:30 IC50 (nM)	80:20 IC50 (nM)	90:10 IC50 (nM)	
AB301	0.59	0.58	0.56	0.54	
AB302	>5	>10	>10	>10	
AB304	0.05	0.07	0.11	0.18	

Cell viability assay with varying ratio of OVCAR3 WT and Muc16-KO cells



OVCAR3-AV cells have varying levels of Muc16 expression being constant to mimic the expression of both targets to that of patient tumors.

FIG. 32



Ab	OVCAR3-AV IC ₅₀ (nM)	DPH
AB001	>10	4
AB301	1.0	4
AB302	0.3	4
AB304	0.07	4
AB309	0.10	4
AB301+AB302	0.36	4

FIG. 33A

Biologic	Format	Yield (mg/L)	HPLC-SEC	Valency
AB301	IgG	59	single peak	2
AB302	IgG	70	single peak	2
AB303 #	Fab1-scFv1-Fc	2	>80%	2
AB304	Fab-Diabody-Fc	108	single peak	4
AB305	Fab-Diabody-Fc	67	single peak	4
AB306	Diabody-Fc	82	>90%	2
AB307 #	Fab1-Diabody-Fc	1	single peak	3
AB308 #	IgG-scFv (Fab-Fc-scFv)	4	>90%	4
AB309	Diabody-Fc-Fab	120	single peak	4

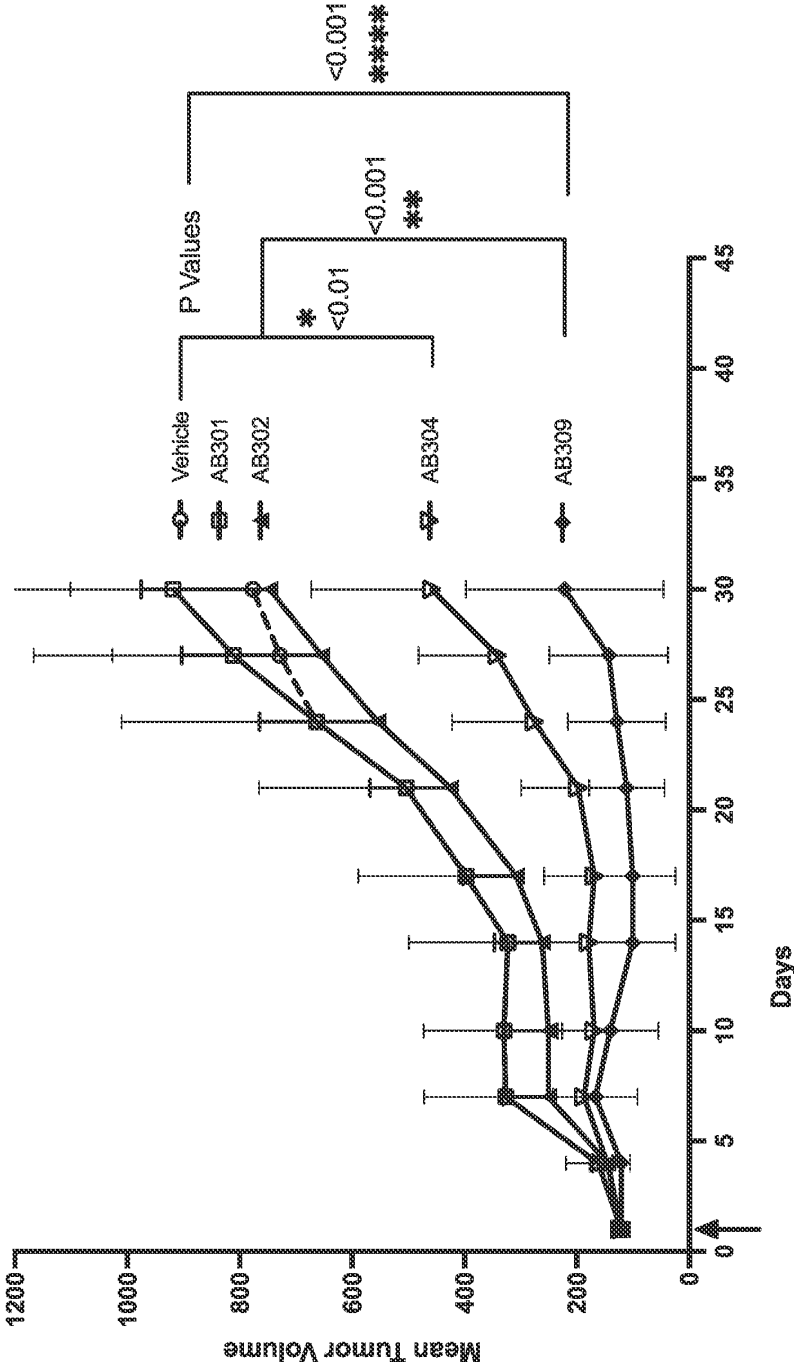
FIG. 33B

No	Selected Platforms	Expression Titer (mg/L)	% Monomer	Monomer Yield (mg/L)	Valency
1#	Diabody-Fc-Diabody	12	80	10	4
2#	Diabody-Fc-scFv	47	67	30	4
3#	scFv-Fc-Diabody	15	79	10	4
4#	scFv-Fc-scFv	82	81	70	4
5#	IgG-Diabody	47	44	21	4
6#	IgG-scFv	134	71	95	4
7	Platform 2 (Diabody-Fc-Fab)	294	90	190	4
8	Platform 4 (Fab-Diabody-Fc)	210	95	200	4
9	Trastuzumab IgG	240	95	228	2

FIG. 34A

Group	N	Agent	Active Dose	Route	Schedule
1	8	Vehicle	None	i.v.	qd x 1
2	8	AB301	2.25 mg/kg (15nmoles)	i.v.	qd x 1
3	8	AB302	2.25 mg/kg (15nmoles)	i.v.	qd x 1
4	8	AB304	3 mg/kg (15nmoles)	i.v.	qd x 1
5	8	AB309	3 mg/kg (15nmoles)	i.v.	qd x 1

FIG. 34B



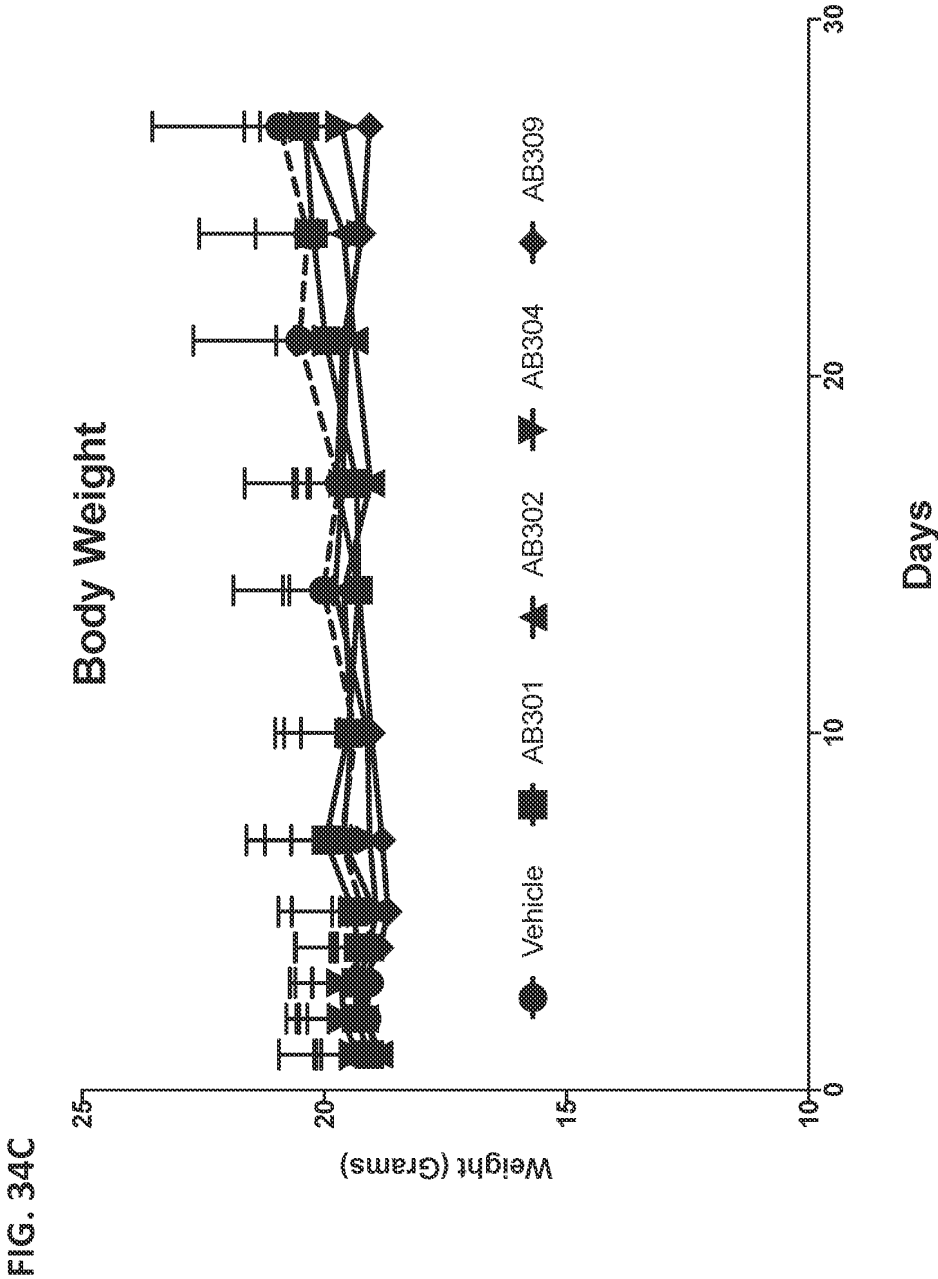
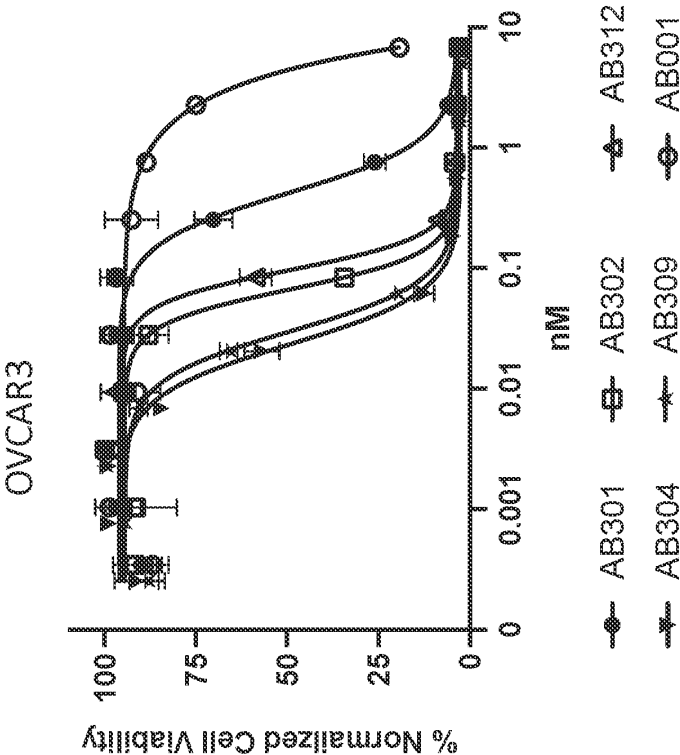


FIG. 35



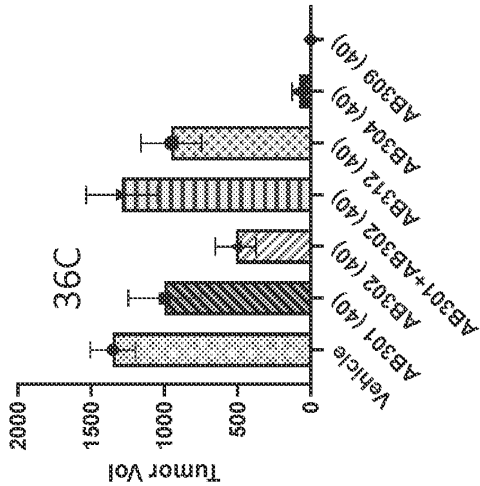
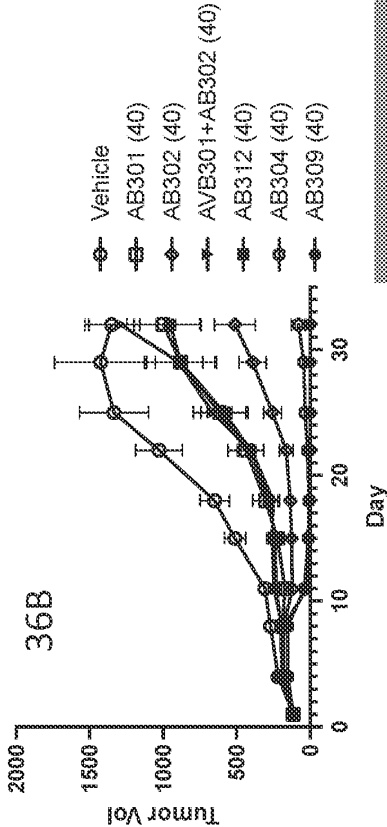
ADC	OVCAR3 IC50 (nM)	DAR
AB301	0.42	4
AB302	0.07	4
AB312	0.10	2
AB304	0.02	4
AB309	0.03	4
AB001	>10	4

FIG. 36A

Group	N	Agent	Active Dose (mg/kg)	Active Dose (nmoles/kg)	Route	Schedule
1	8	Vehicle	None	None	i.v.	qd x 1
2	8	AB301	6	40	i.v.	qd x 1
3	8	AB302	6	40	i.v.	qd x 1
4	8	AB301+AB302	3+3	20+20	i.v.	qd x 1
6	8	AB312	6	40	i.v.	qd x 1
8	8	AB304	8	40	i.v.	qd x 1
10	8	AB309	8	40	i.v.	qd x 1

FIG. 36B-36D

All groups are dosed with 40nmoles of ADC (single dose on Day1 when the tumor size was 100-150mm³)



Efficacy Superiority	+	pValue
AB301 (40) < AB304 (40)		
AB301 (40) < AB309 (40)		
AB302 (40) < AB309 (40)		
AB312 (40) < AB304 (40)	****	<0.0001
AB312 (40) < AB309 (40)		
AB301+AB302 (40) < AB304 (40)		
AB301+AB302 (40) < AB309 (40)		
AB302 (40) < AB304 (40)	**	0.0092

36D

FIG. 37A

Group	N	Agent	Active Dose (mg/kg)	Active Dose (nmoles/kg)	Route	Schedule
1	8	Vehicle	None	None	i.v.	qd x 1
2	8	AB301	6	40	i.v.	qd x 1
3	8	AB309	8	40	i.v.	qd x 1
4	8	AB309	4	20	i.v.	qd x 1
4	8	AB309	2	10	i.v.	qd x 1

FIGs. 37B-37D

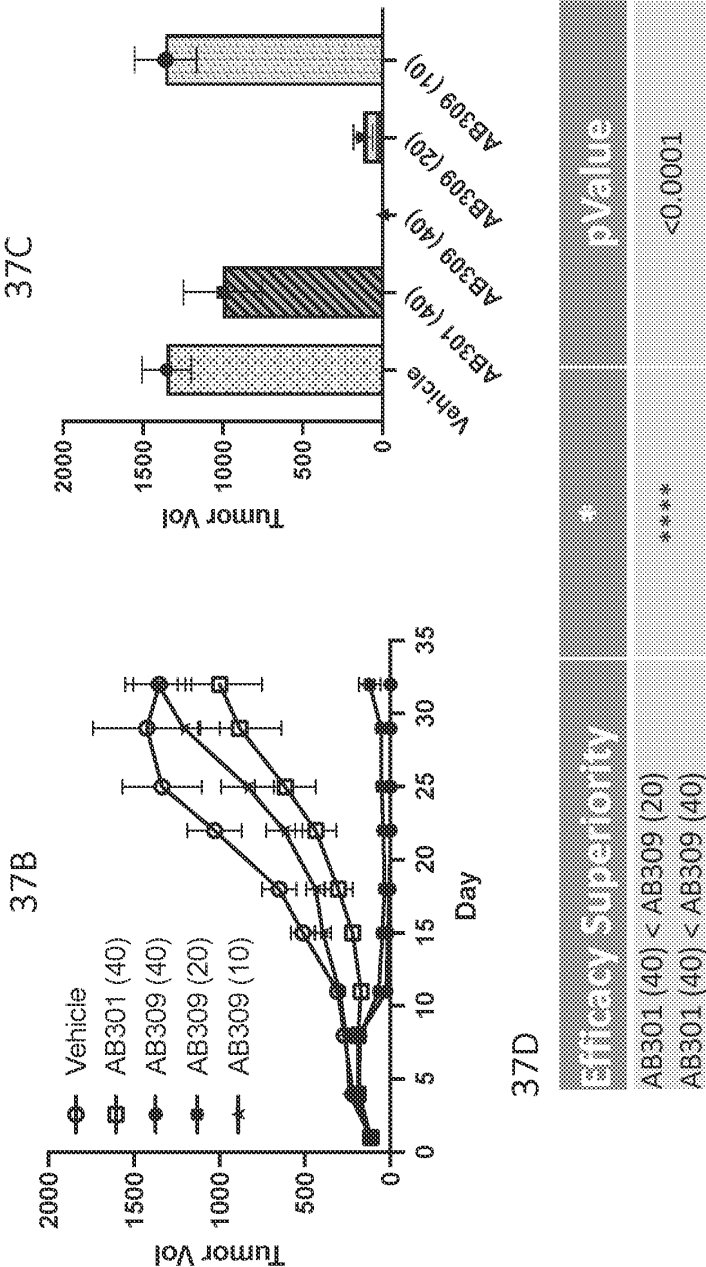
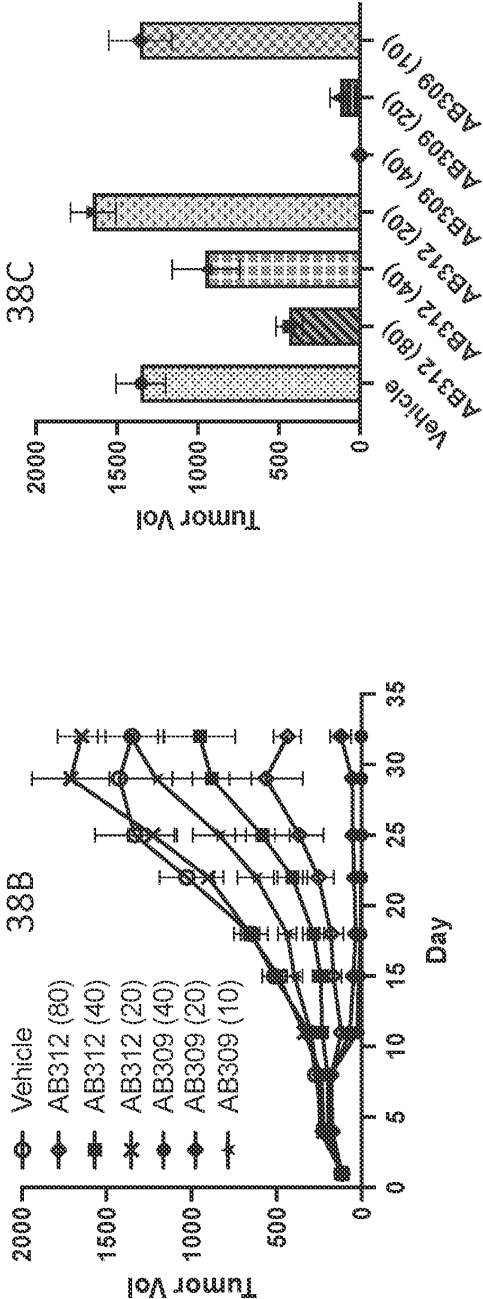


FIG. 38A

Group	N	Agent	Active Dose (mg/kg)	Active Dose (nmoles/kg)	Route	Schedule
1	8	Vehicle	None	None	i.v.	qd x 1
2	8	AB312	12	80	i.v.	qd x 1
3	8	AB312	6	40	i.v.	qd x 1
4	8	AB312	3	20	i.v.	qd x 1
5	8	AB309	8	40	i.v.	qd x 1
6	8	AB309	4	20	i.v.	qd x 1
7	8	AB309	2	10	i.v.	qd x 1

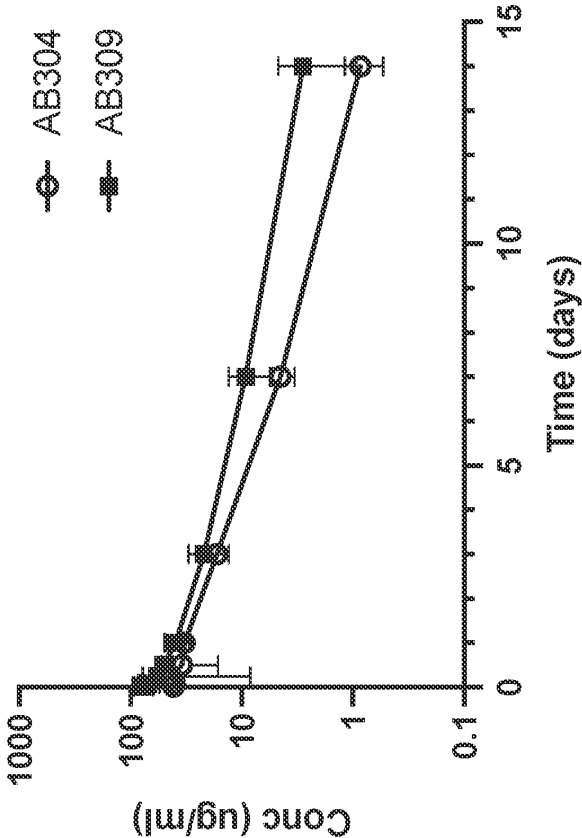
FIGs. 38B-38D



38D

Group	*	pValue
AB312 (80) < AB309 (20)	**	0.0028
AB312 (80) < AB309 (40)	****	<0.0001
AB312 (40) < AB309 (40)		
AB312 (40) < AB309 (20)		

FIG. 40



Group	Clearance mL/Day/kg
AB304 (3mg/kg), n=2	19.84
AB309 (3mg/kg), n=2	13.37
*Anti-NaPi-2b mAb 1mg/kg, n=4	13.80

*Reported value in the publication
Clin Cancer Res. 2015;21(22):5139-5150

Format	IC ₅₀ nM ADC appears short that
AB304	0.04
AB306	0.19

Figure 41

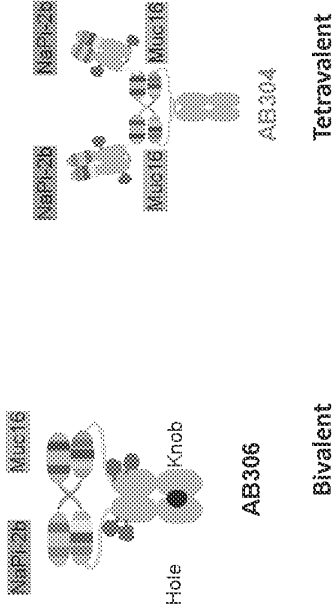
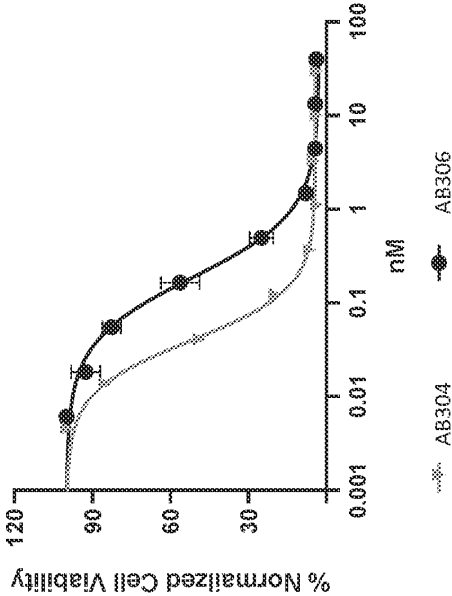


FIG. 42

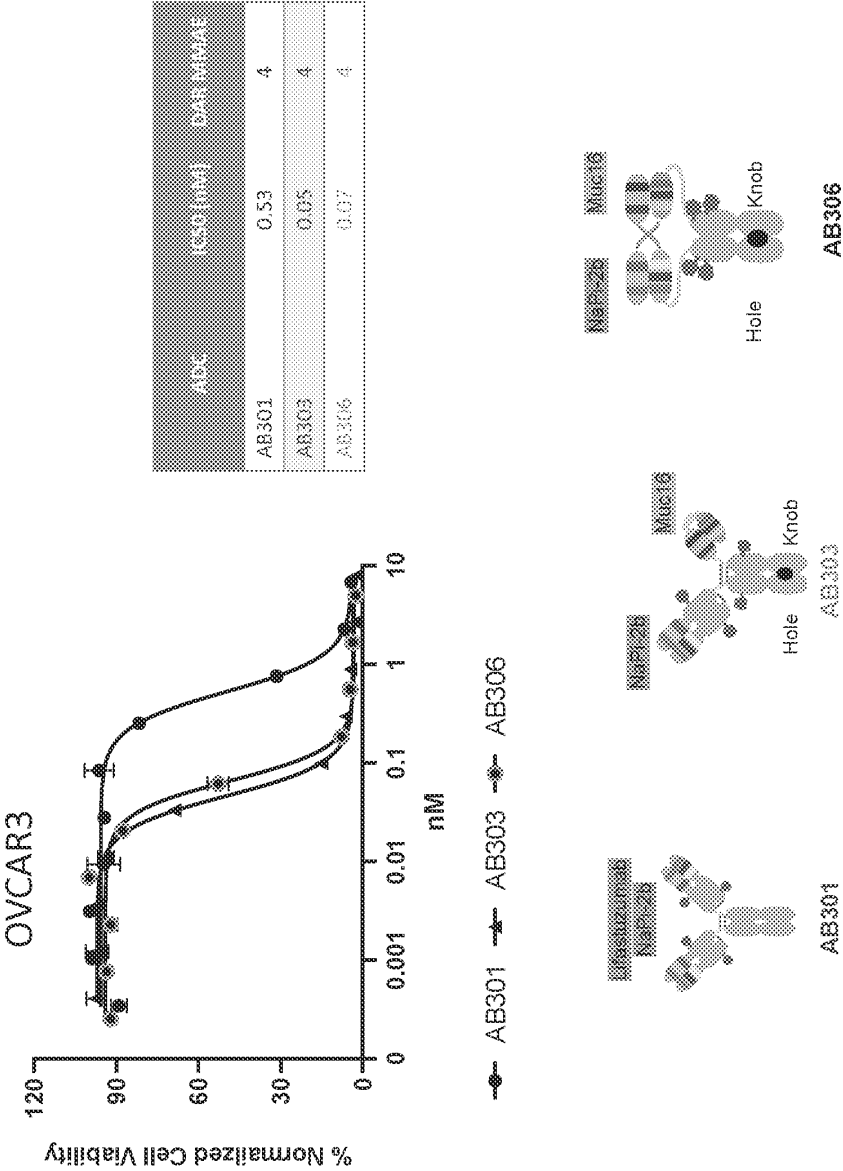


FIG. 43

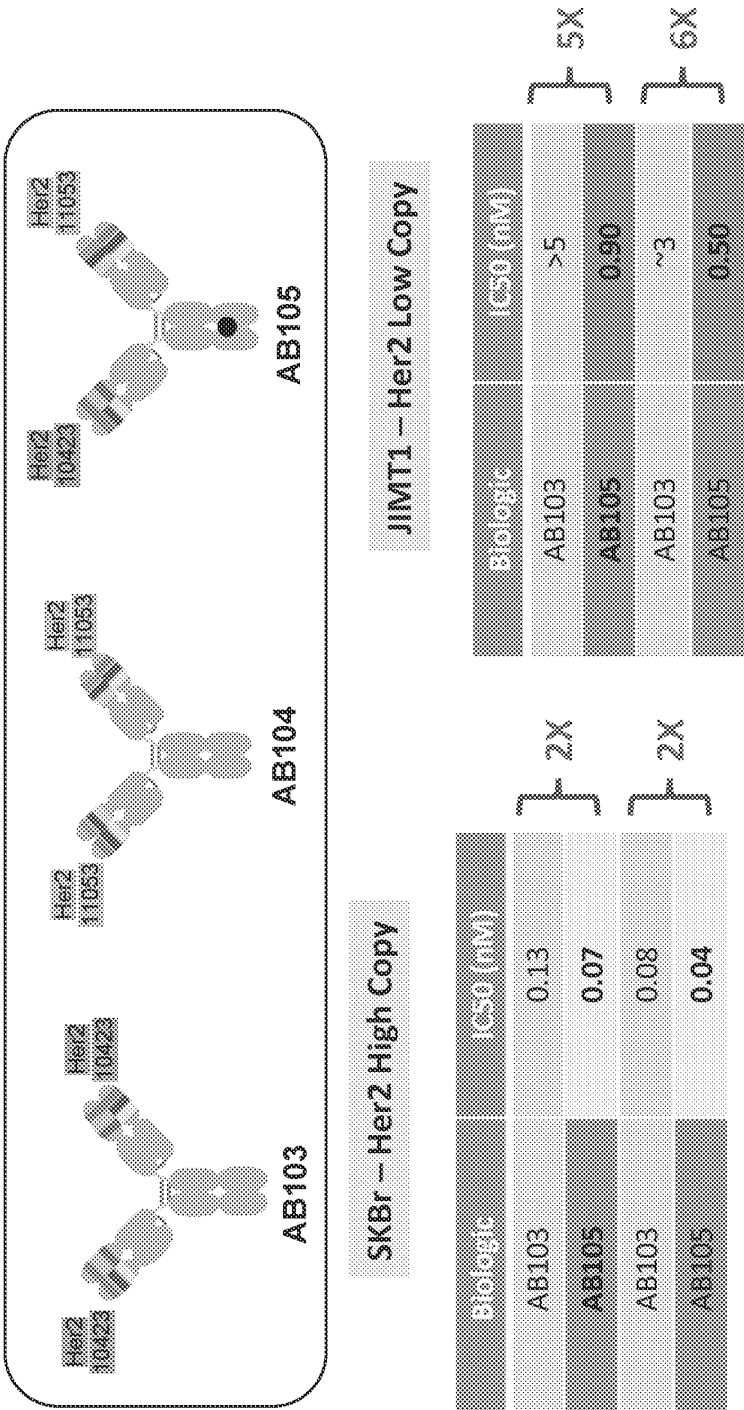


FIG. 44

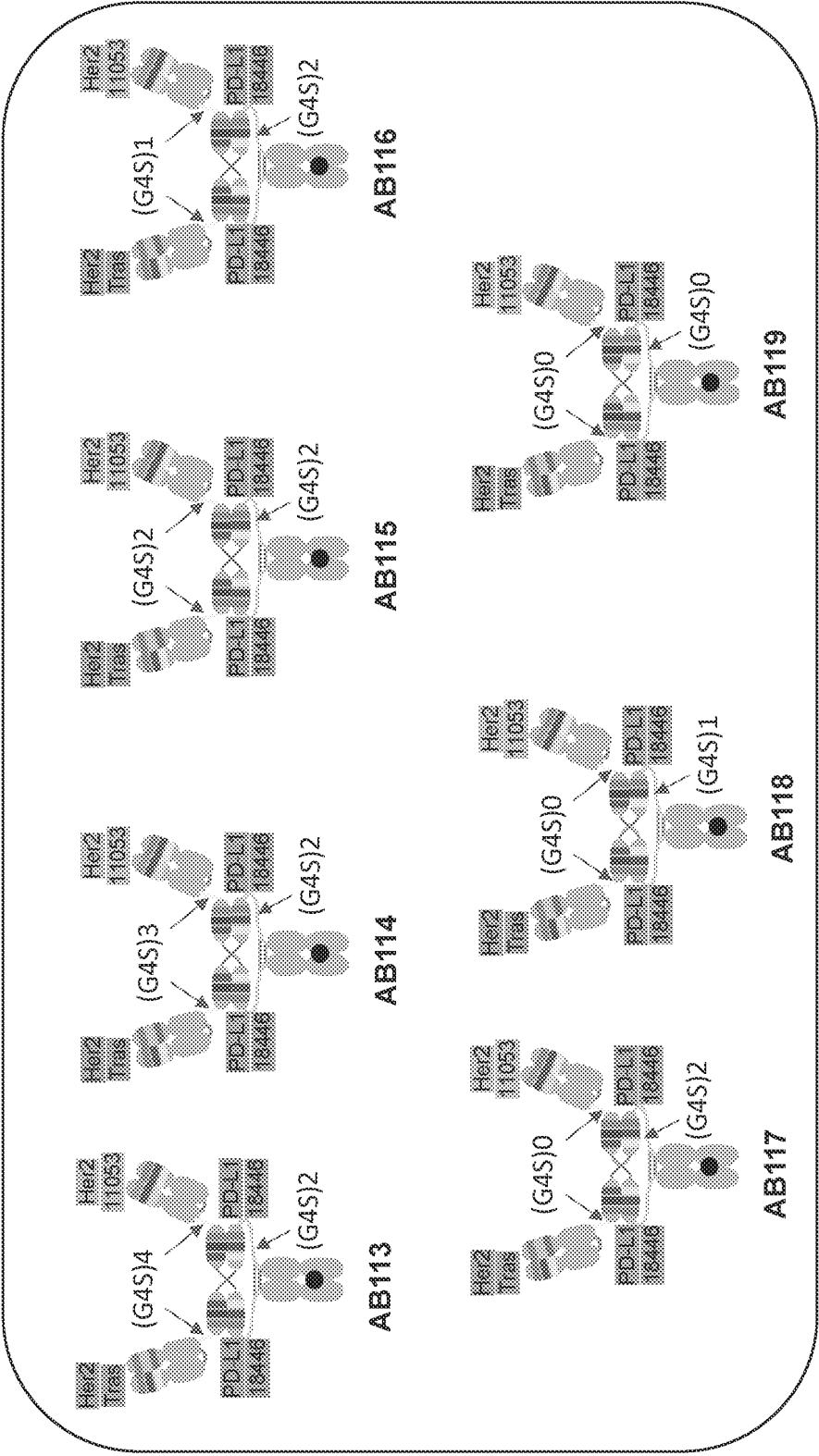


FIG. 45

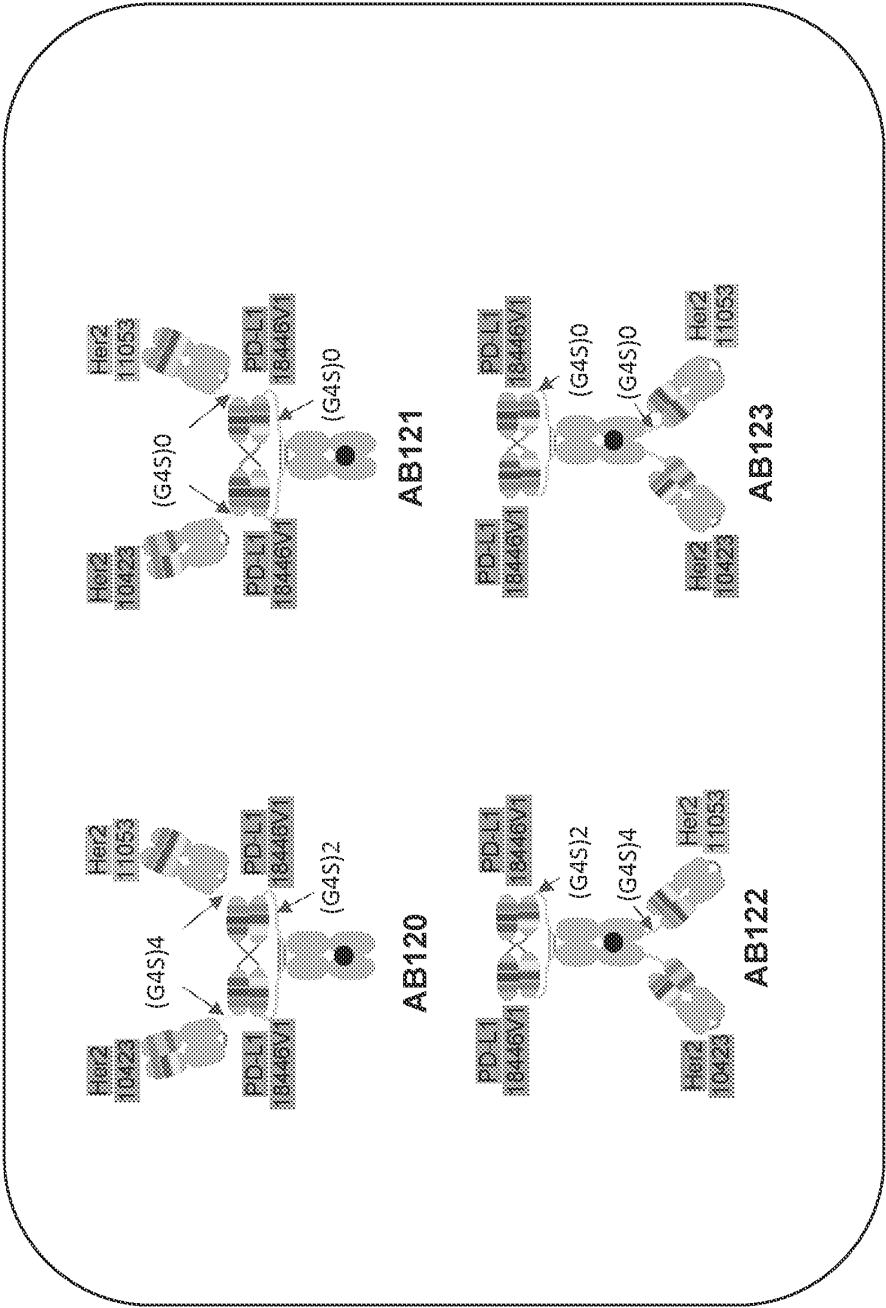


FIG. 46

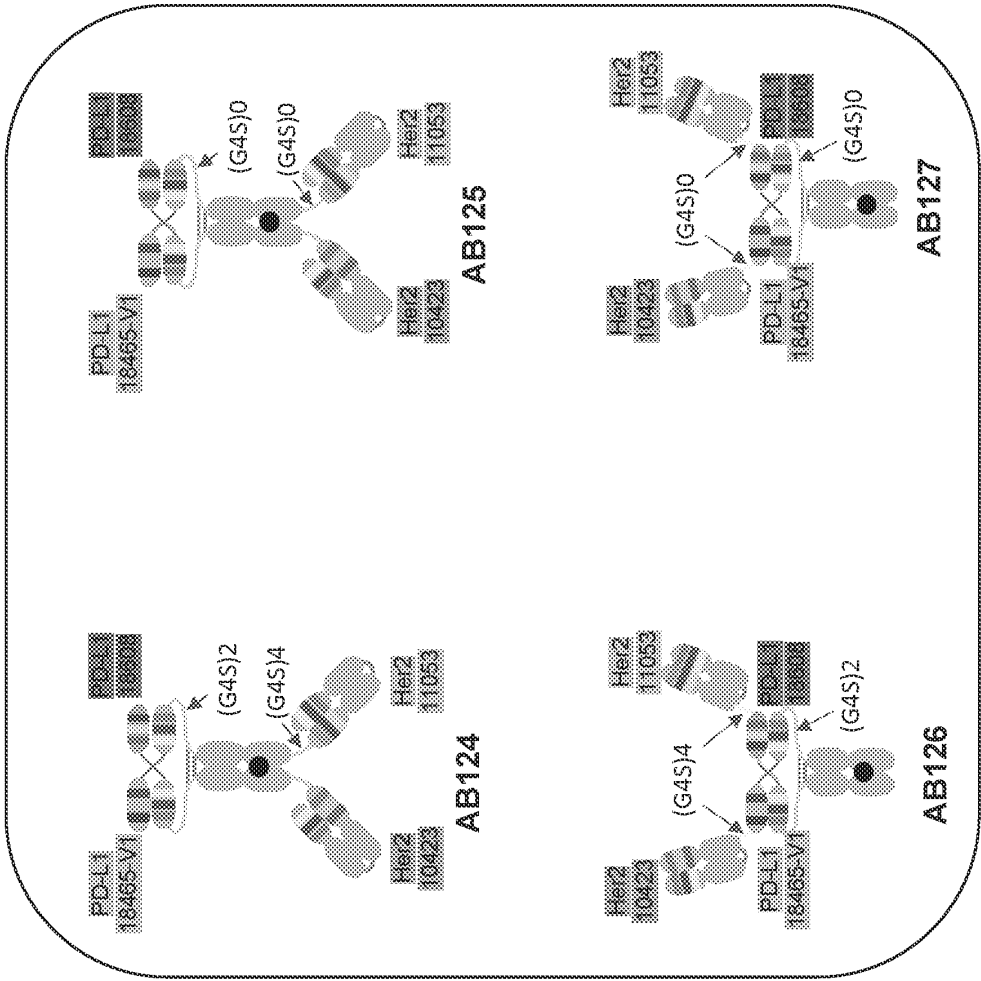


FIG. 47

Platform 4 – Spacer Variations

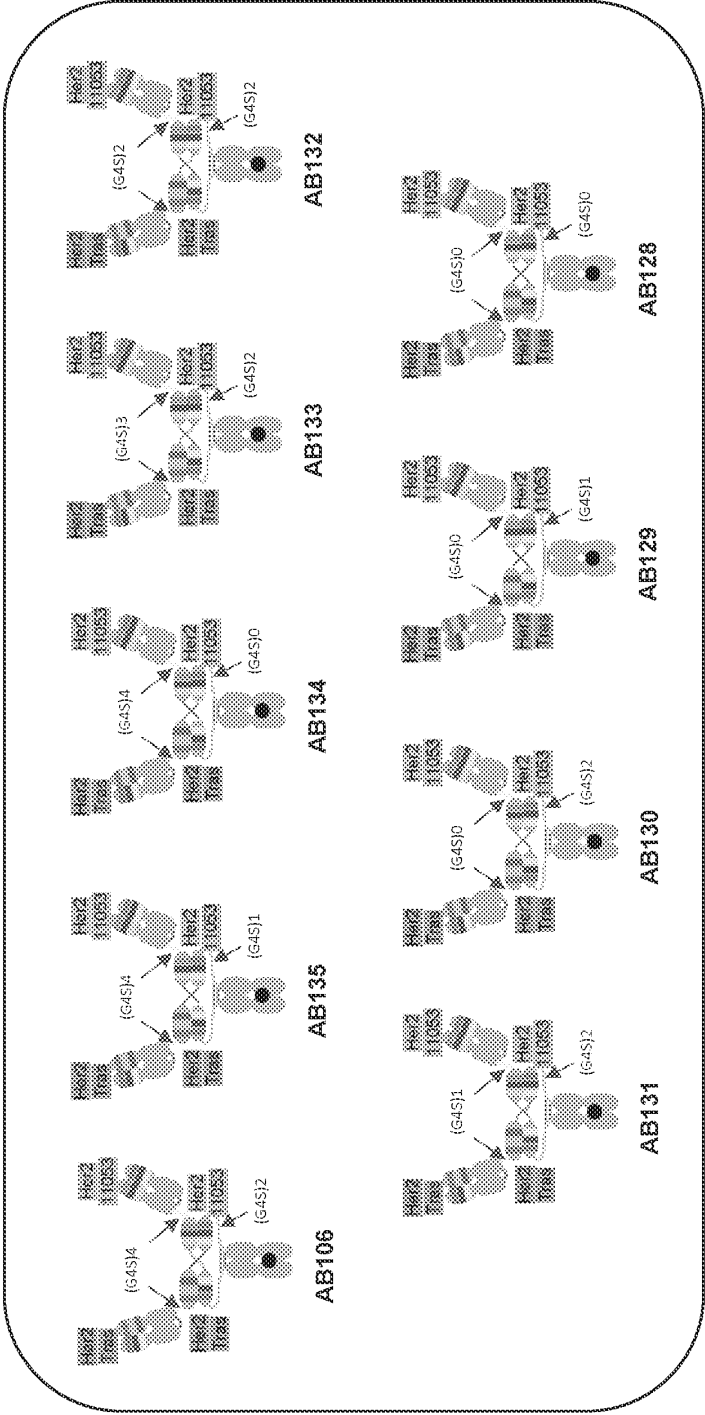


FIG. 48

Platform 2 – Spacer Variations

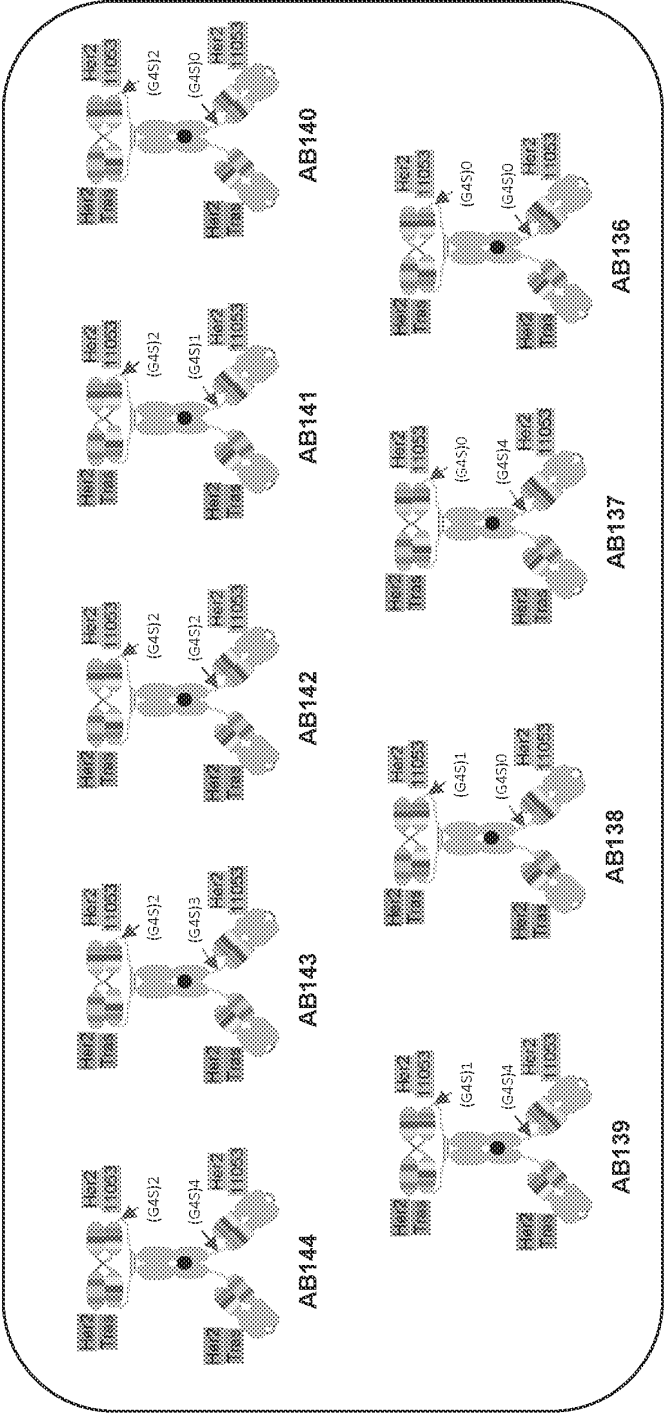
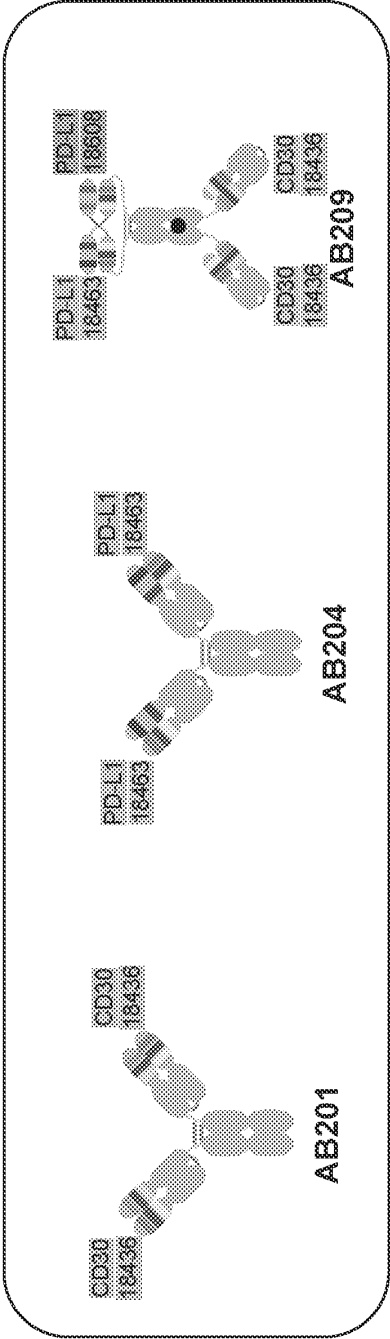


FIG. 49



Biologic	CD30 KO IC50 (nM)	PD-L1 KO IC50 (nM)	Mixed Cell Population IC50 (nM)
AB201 (CD30 mono)	>5	0.004	>5
AB204 (PD-L1 mono)	0.74	>5	>5
AB209 (Multi-Specific)	0.94	0.007	0.05

FIG. 50

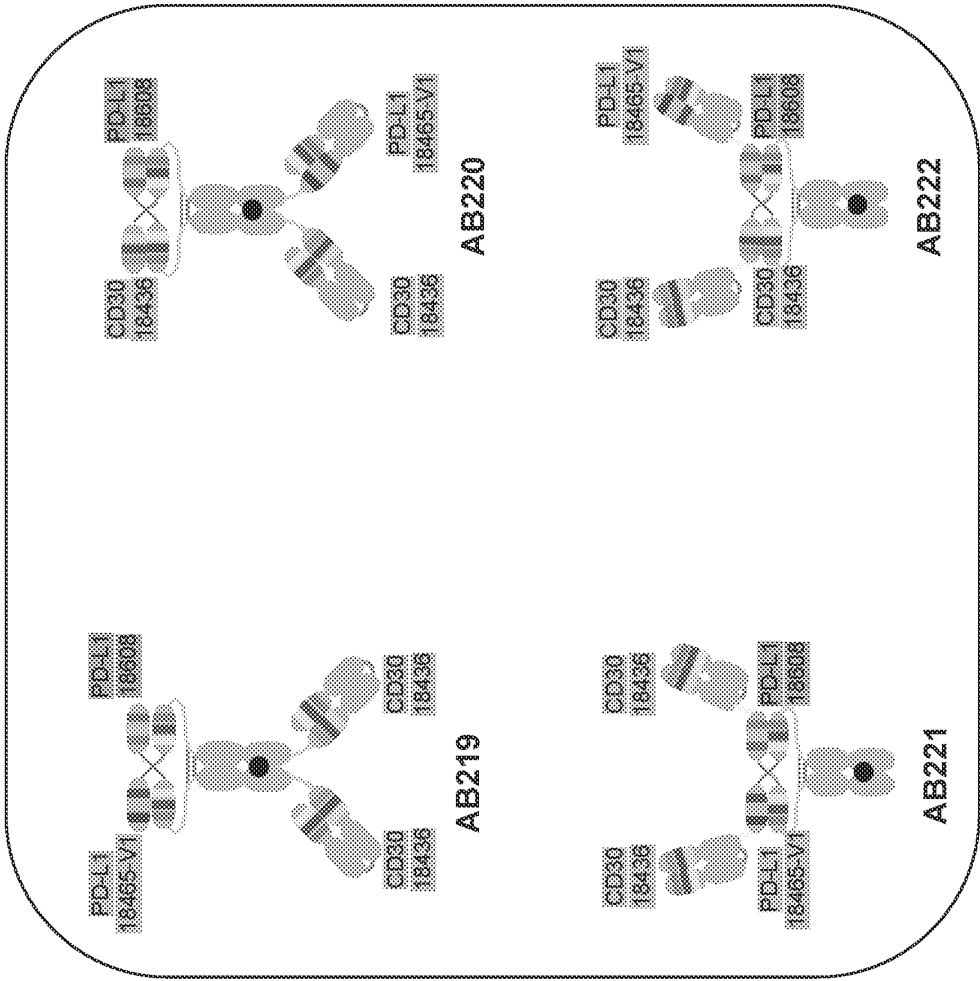
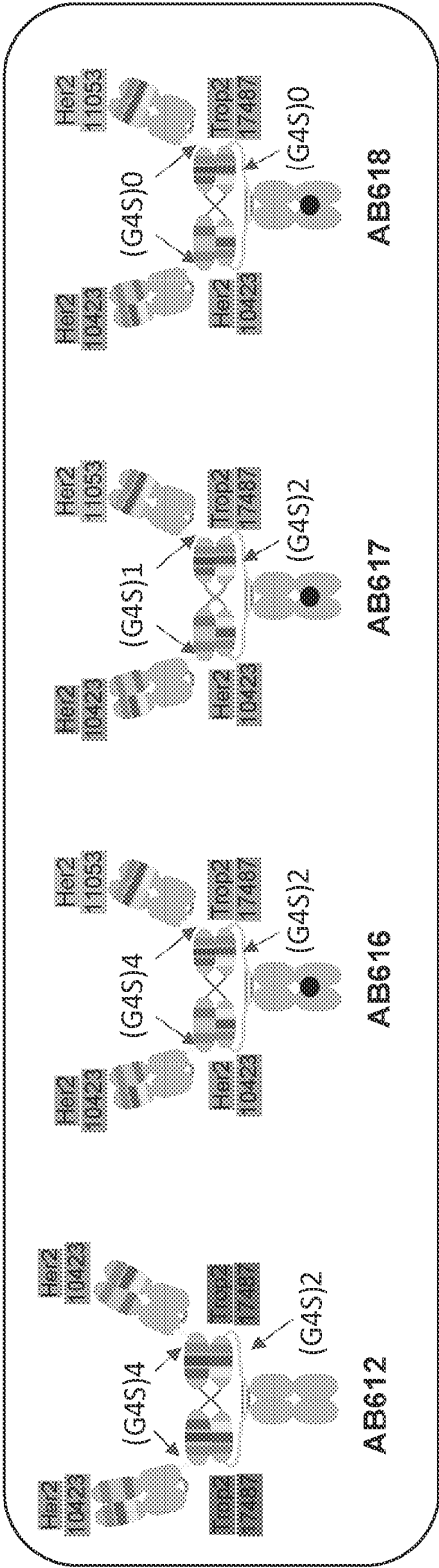
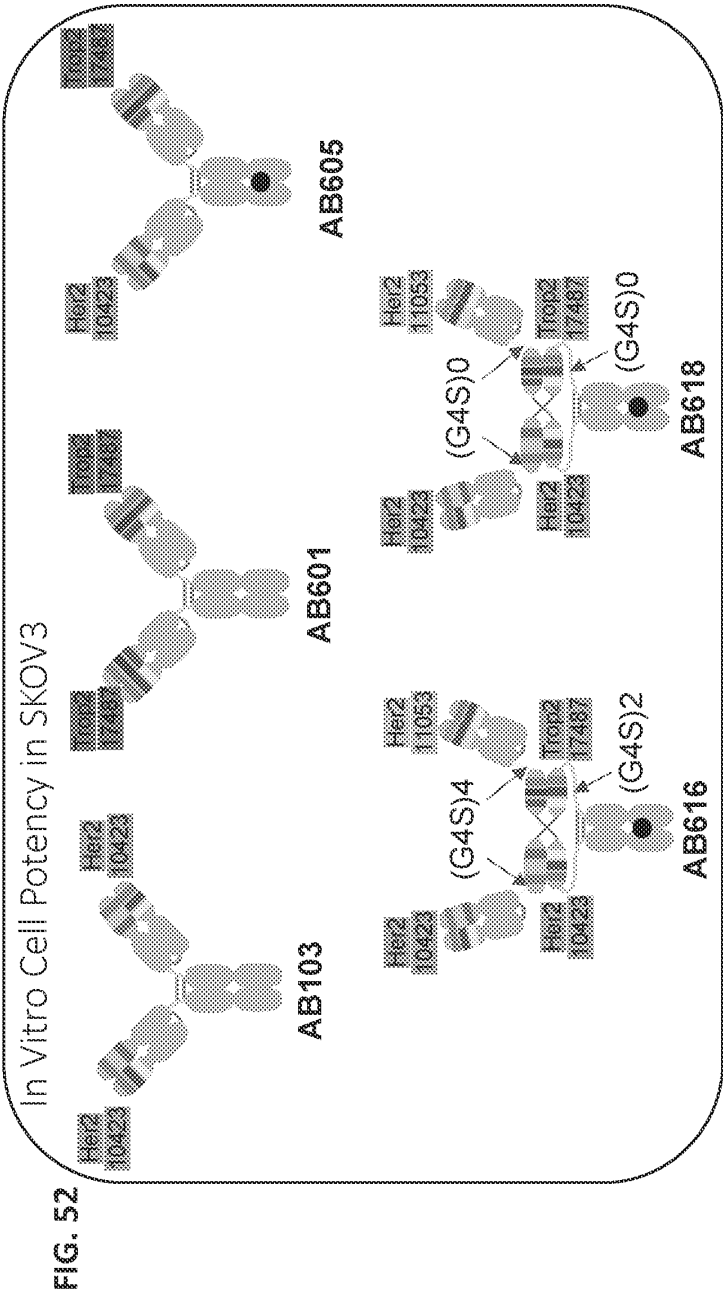


FIG. 51

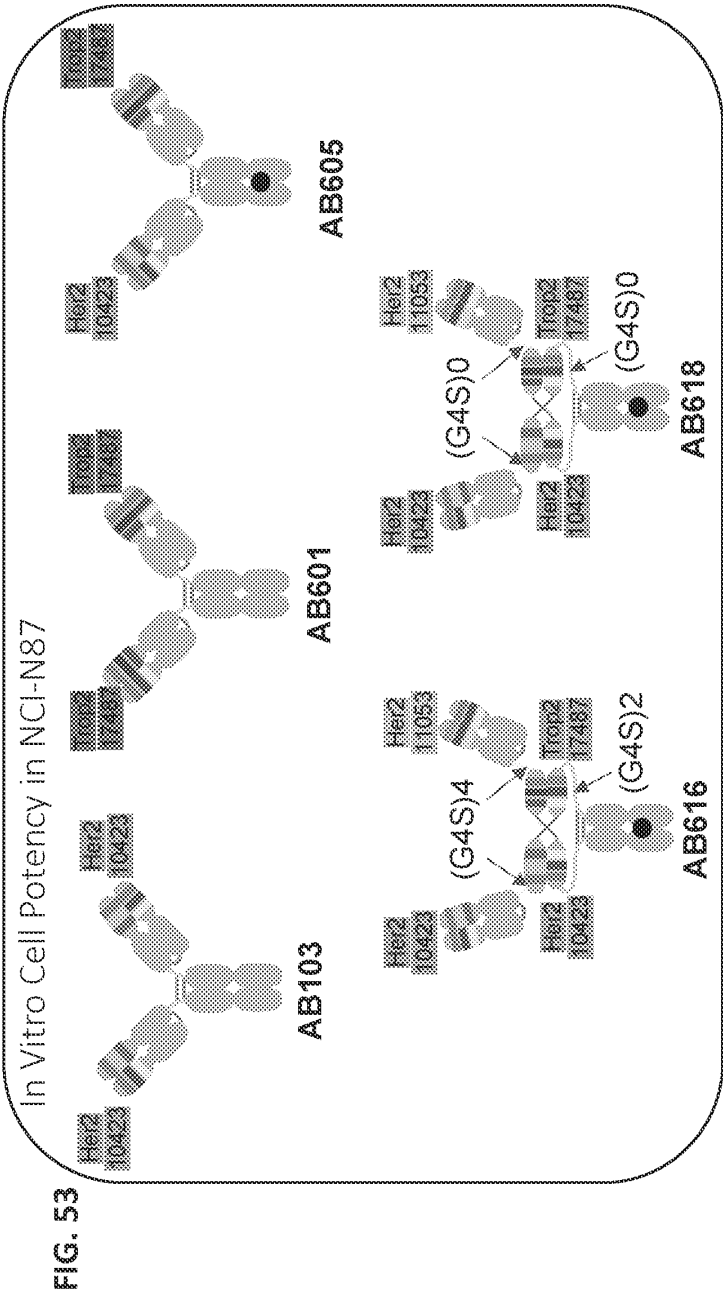
In Vitro Cell Potency in SKOV3 and JIMT1: Platform 4 Format



Biologic	SKOV3 IC50 (nM)	JIMT1 IC50(nM)
AB612	0.05	0.06
AB616	0.07	0.12
AB617	0.07	0.12
AB618	0.06	0.08



Biologic	SKOV3 IC50 (nM) All paratopes activity	SKOV3 IC50 (nM) 17487 paratope activity	SKOV3 IC50 (nM) 10423 paratope activity	SKOV3 IC50 (nM) 11053 paratope activity
AB103	0.22	>5	0.22	>5
AB601	1.0	1.40	>5	>5
AB605	0.21	1.40	0.39	>5
AB616	0.08	0.43	0.11	0.23
AB618	0.08	0.40	0.06	0.17



Biologic	NCI-N87 IC50 (nM) All paratopes activity	NCI-N87 IC50 (nM) 17487 paratope activity	NCI-N87 IC50 (nM) 10423 paratope activity	NCI-N87 IC50 (nM) 11053 paratope activity
AB103	0.04	1.01	0.05	0.77
AB601	0.01	0.02	0.67	0.32
AB605	0.02	0.07	0.05	0.44
AB616	0.02	0.06	0.03	0.02
AB618	0.01	0.03	0.01	0.01

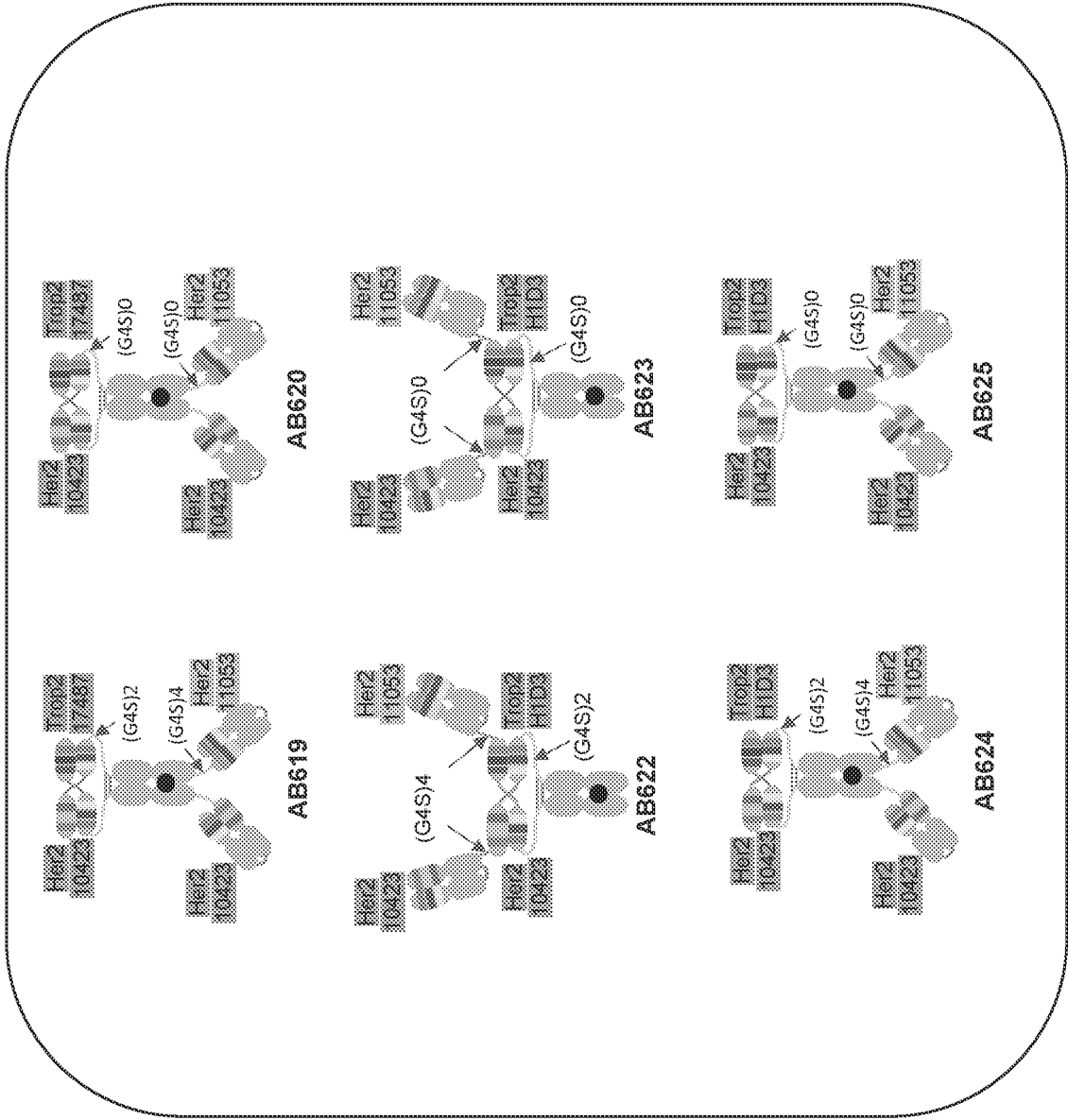


FIG. 54