

FIG. 1A

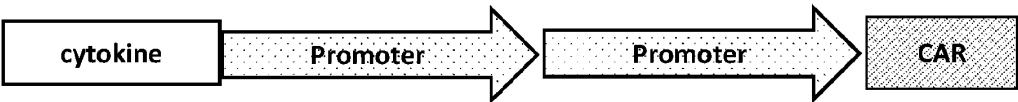


FIG. 1B

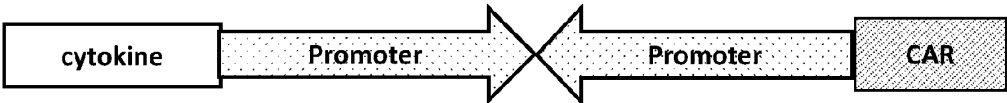


FIG. 1C

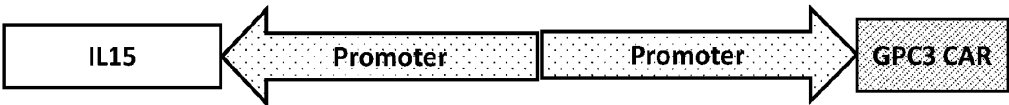
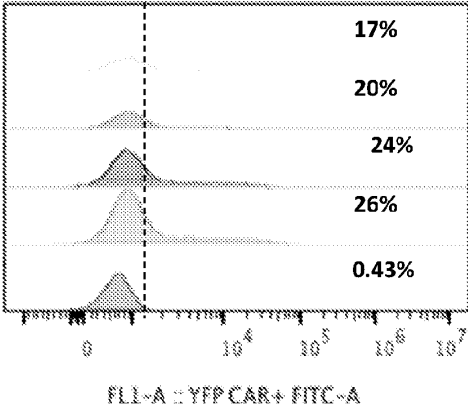


FIG. 1D

Lentiviral constructs (CAR + IL15)	KIR3DS1z + IL15
	CD28Z + IL15
	OX40Z + IL15
	41BBz + IL15
	NV



Lentiviral constructs (CAR only)	KIR3DS1z
	CD28Z
	OX40Z
	41BBz
	NV

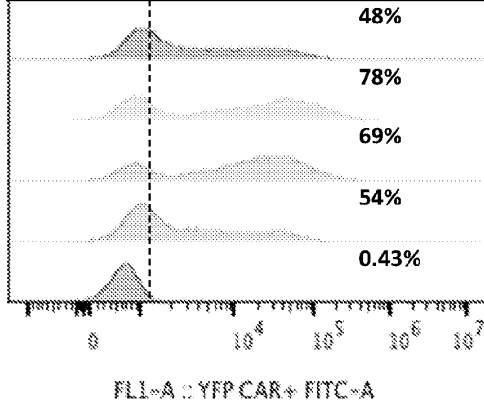
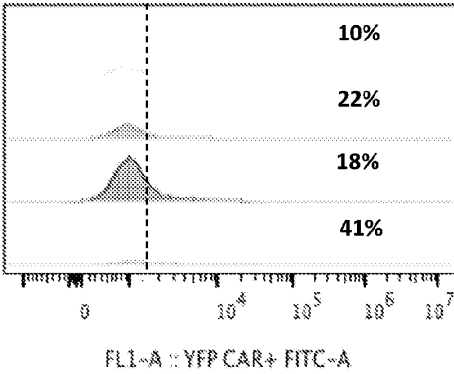


FIG. 2

Retroviral constructs (CAR + IL15)	KIR3DS1z + IL15
	CD28Z + IL15
	OX40Z + IL15
	41BBz + IL15



Retroviral constructs (CAR only)	KIR3DS1z
	CD28Z
	OX40Z
	41BBz
	NV

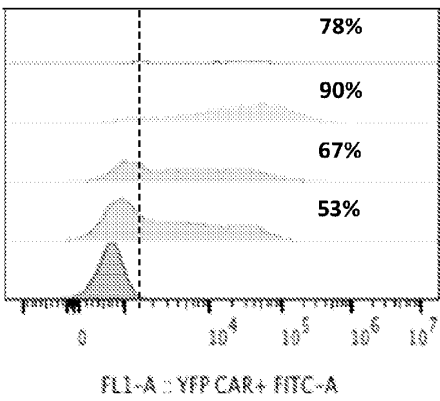


FIG. 3

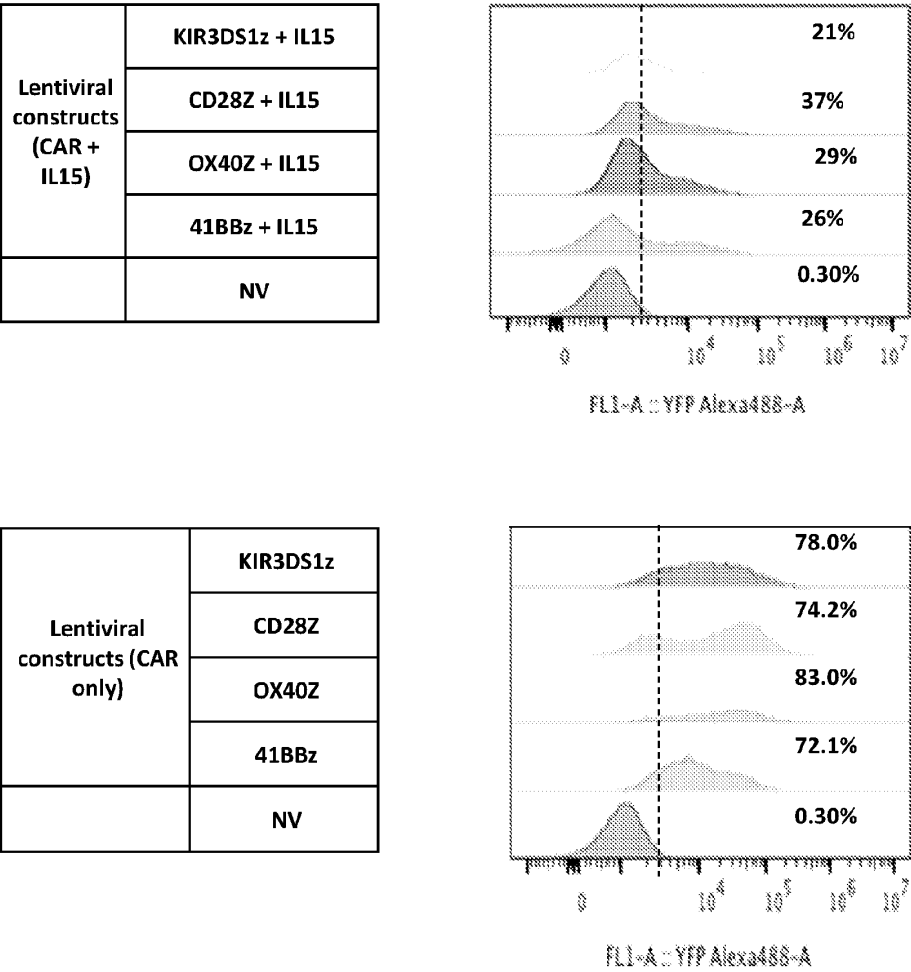
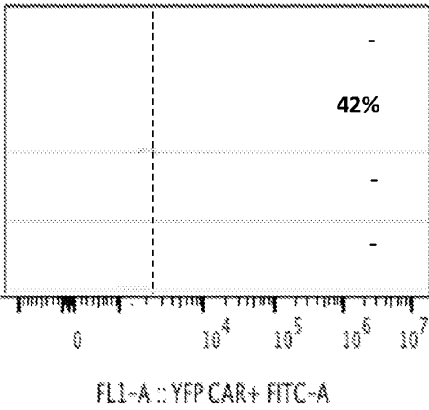


FIG. 4

Retroviral constructs (CAR + IL15)	KIR3DS1z + IL15
	CD28Z + IL15
	OX40Z + IL15
	41BBz + IL15



Retroviral constructs (CAR only)	KIR3DS1z
	CD28Z
	OX40Z
	41BBz
	NV

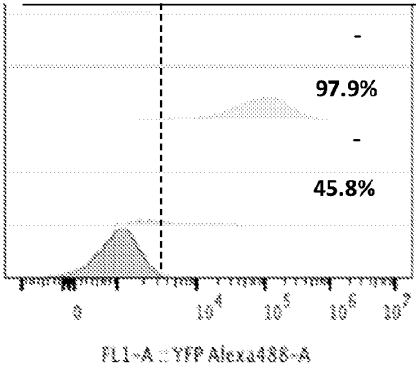


FIG. 5

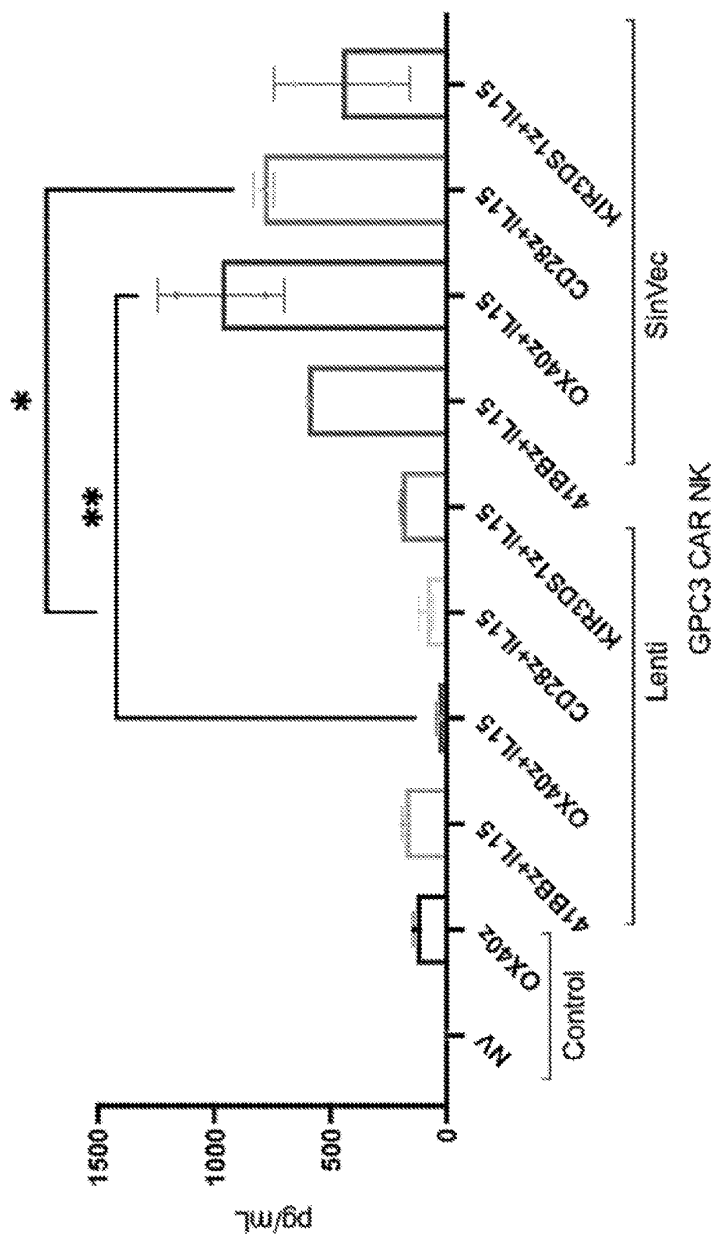


FIG. 6

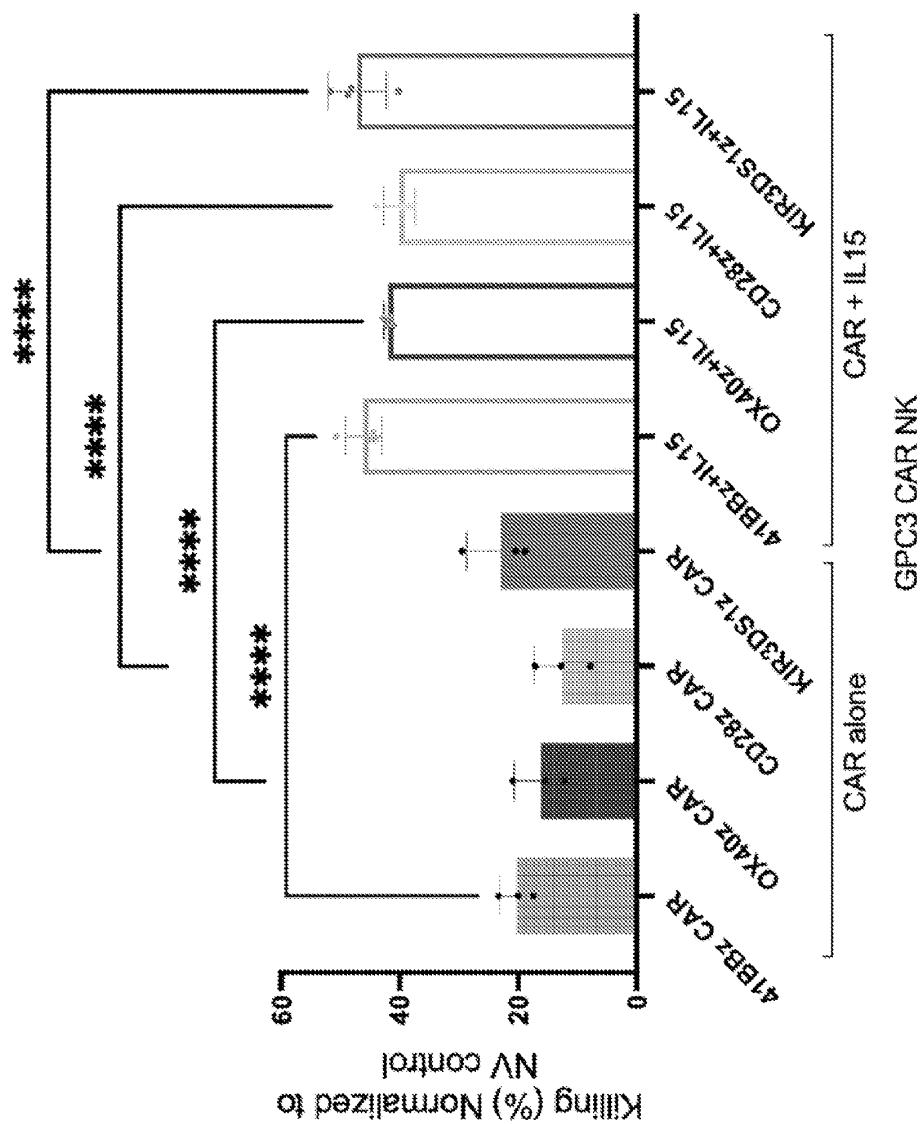


FIG. 7

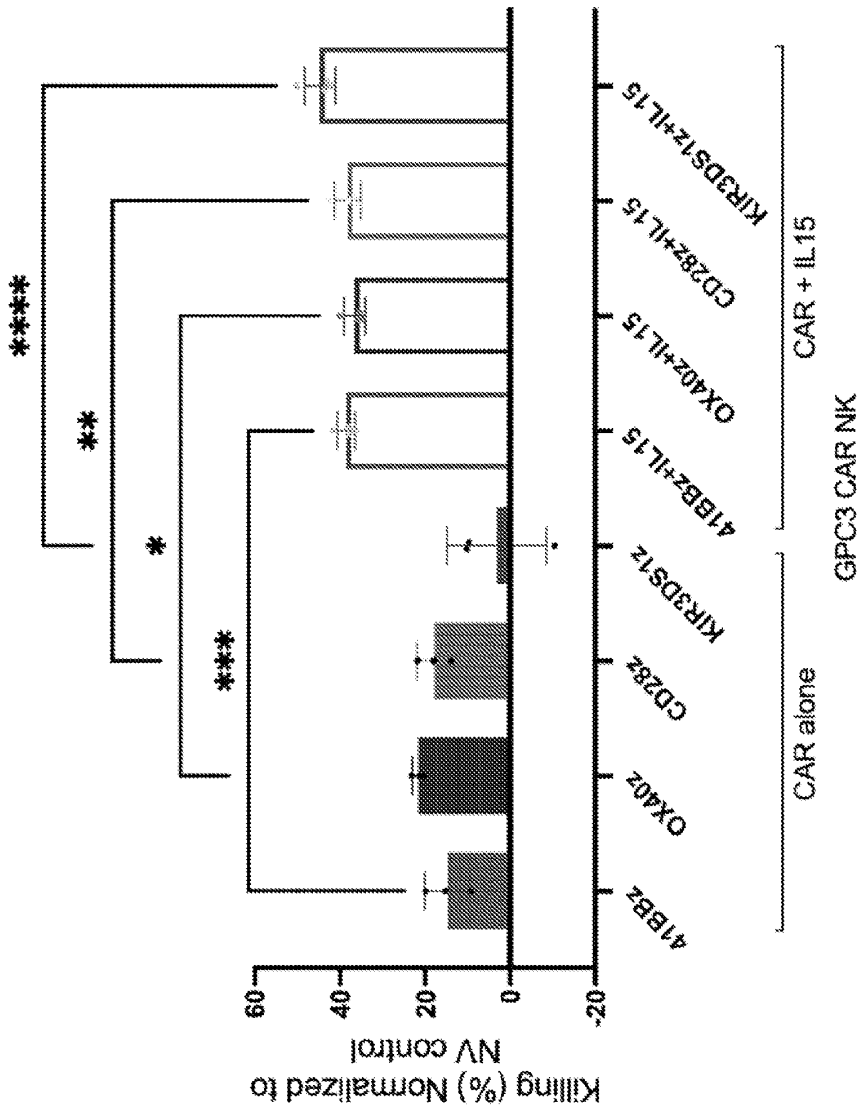


FIG. 8

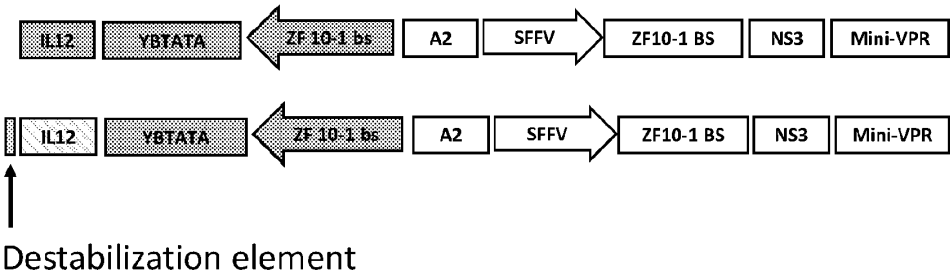


FIG. 9

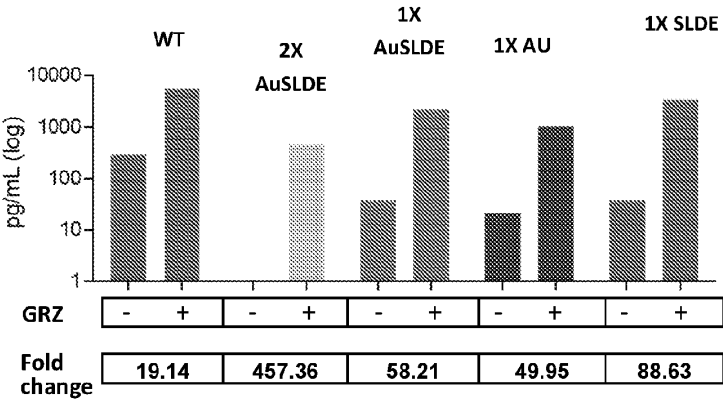


FIG. 10

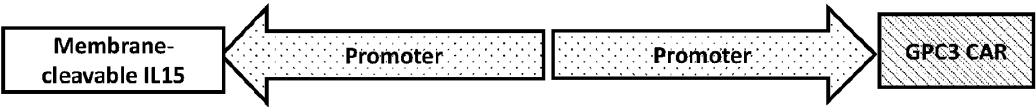


FIG. 11

% target cell growth														
	Co-stim	Linker	ctrl15	Backbone	CAR#	CAR %	EL15%	% double positives	IL15 Payload (pg/ml)	1st	2nd	3rd	Copies/cell (300d virus)	MOI used (IU)
S806250	4188	E2A T2A	ctrl15 TACE-10	RetroVec	CARn-171	38.2	9.45	12	71.6	26.7	86.5	66	181.9	304.2
S806251	0340	E2A T2A	ctrl15 TACE-10		CARn-172	51.8	23.7	20	45.5	n/a	n/a	n/a	--	--
S806252	CD28	E2A T2A	ctrl15 TACE-10		CARn-170	63	34.3	31.2	16.96	14.06	51.5	11.18	82.7	84
S806253	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-171	44.2	11.8	11.5	65.4	8.6	13.6	22	130.1	--
S806254	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10	SynVec	CARn-170	67.5	52.2	45.2	137.24	10.99	8.69	89.17	281.7	92.4
S806255	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-171	48.9	21.8	24	11.1	6.6	30.6	73.5	243.5	--
S806256	4188	E2A T2A	ctrl15 TACE-10		CARn-170	58.8	67.6	48.6	54.21	24.45	15.24	102.30	221.7	231.8
S806257	0340	E2A T2A	ctrl15 TACE-10		CARn-171	37.5	30.3	27.6	60	6.8	37.3	81.4	217	--
S806258	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-171	46.2	10.7	14.9	49.9	10.2	78.5	83.4	180.3	365.2
S806259	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	58.6	23.2	28.7	24.6	n/a	n/a	n/a	--	--
S806260	0340	E2A T2A	ctrl15 TACE-10		CARn-170	77.3	39.5	31.8	53.09	13.09	5.39	79.6	132.2	168.2
S806261	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-171	56.8	10.1	13.2	80.4	8.1	37.3	39	57.9	--
S806262	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-171	52.5	21.9	25.8	84.7	7.1	27	47.8	50.5	414.6
S806263	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	66.8	38	32.7	74	n/a	n/a	n/a	--	--
S806264	0340	E2A T2A	ctrl15 TACE-10		CARn-170	50.2	42	33.4	95.23	25.11	75.33	105.6	416	2184
S806265	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	42	32.2	22.6	13.6	n/a	n/a	n/a	--	--
S806266	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-170	76.5	54.1	50.3	224.69	16.90	111.0	107.1	31.5	129.0
S806267	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	86.2	36.4	33.5	23.05	n/a	n/a	n/a	--	--
S806268	0340	E2A T2A	ctrl15 TACE-10		CARn-171	37	32	24.5	62	9.8	8.5	16.6	128.5	85.2
S806269	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	63.3	49	46	36.3	9.5	39.1	100	78	--
CD3 alternate sequence														
	Co-stim	Linker	ctrl15	Backbone	CAR#	CAR %	EL15%	% double positives	IL15 Payload (pg/ml)	1st	2nd	3rd	Copies/cell (300d virus)	MOI used (IU)
S806290	4188	E2A T2A	ctrl15 TACE-10	RetroVec	CARn-173	33.2	14.3	10.6	38.6	11.7	10.8	44	n/a	732.0
S806291	0340	E2A T2A	ctrl15 TACE-10		CARn-174	43.2	19.2	10.6	32	17.6	29	90	n/a	--
S806292	CD28	E2A T2A	ctrl15 TACE-10		CARn-170	77.3	48.1	45.8	200.09	8.39	115.1	--	371.7	138.4
S806293	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	76	26.5	32.2	56.21	n/a	n/a	n/a	n/a	--
S806294	CD28	E2A T2A	ctrl15 TACE-10	RetroVec	CARn-171	68.5	45.4	49	175.8	8.7	90.9	99.2	210.1	395.0
S806295	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	76.5	65.6	52.7	106.25	--	--	--	--	--
S806296	0340	E2A T2A	ctrl15 TACE-10		CARn-173	24.7	26.3	16.1	21.7	12.1	19.5	38	419.6	1356.0
S806297	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	96	36	32.8	18	10	95	91	419.6	1356.0
S806298	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-173	59.8	38.7	32.8	49.7	8.8	7.7	8	409.3	1296.0
S806299	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	74	53	52	27	9.2	32	98	409.3	1296.0
S806300	0340	E2A T2A	ctrl15 TACE-10		CARn-173	103	67.2	3	3	13.1	54.5	79.2	73.3	984.0
S806301	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	3.5	6.9	0.3	1	9.6	89	100	123.0	984.0
S806302	4188	E2A T2A	ctrl15 TACE-10	SynVec	CARn-173	48	20	20	46.7	8	10.8	35.6	412.4	417.0
S806303	0340	E2A T2A	ctrl15 TACE-10		CARn-174	60	22	17.3	33	11	9.5	100	412.4	417.0
S806304	CD28	E2A T2A	ctrl15 TACE-10		CARn-170	73.5	28.4	27.4	113.4	5.88	126.22	67.67	73.3	87.6
S806305	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	68.5	18.3	17.5	76.4	n/a	n/a	n/a	--	--
S806306	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-173	48.7	27.9	23.1	75.4	5.3	3.6	6.2	138.0	239.0
S806307	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	65	39	59	82	13.8	41	98	138.0	239.0
S806308	0340	E2A T2A	ctrl15 TACE-10		CARn-173	33.8	31.5	42.5	42.5	7.3	10.9	39.6	167.3	232.0
S806309	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	45	38	22.5	82	12.7	47	93	167.3	232.0
S806310	CD28	E2A T2A	ctrl15 TACE-10	SynVec	CARn-173	59.2	30.6	27.1	57.1	9	6.7	68.5	212.9	278.0
S806311	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-174	68	36	27.1	32	10.5	25	83	212.9	278.0
S806312	0340	E2A T2A	ctrl15 TACE-10	SynVec	CARn-170	53.4	43.6	34.2	81.8	4.06	80.83	104.46	76.9	99.6
S806313	ctrl15 TACE-10	E2A T2A	ctrl15 TACE-10		CARn-172	47.8	33.3	24.5	58	n/a	n/a	n/a	--	--

FIG. 12

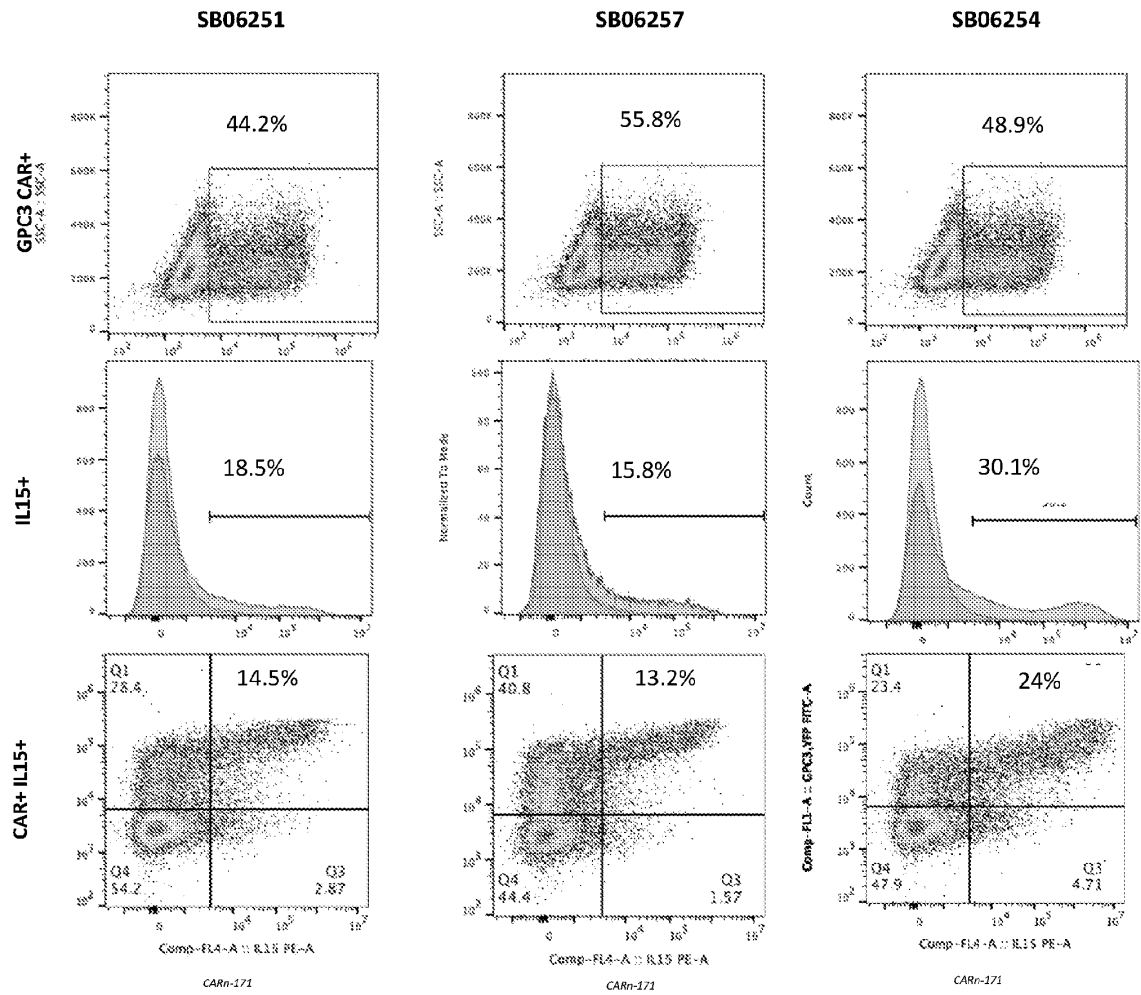


FIG. 13A

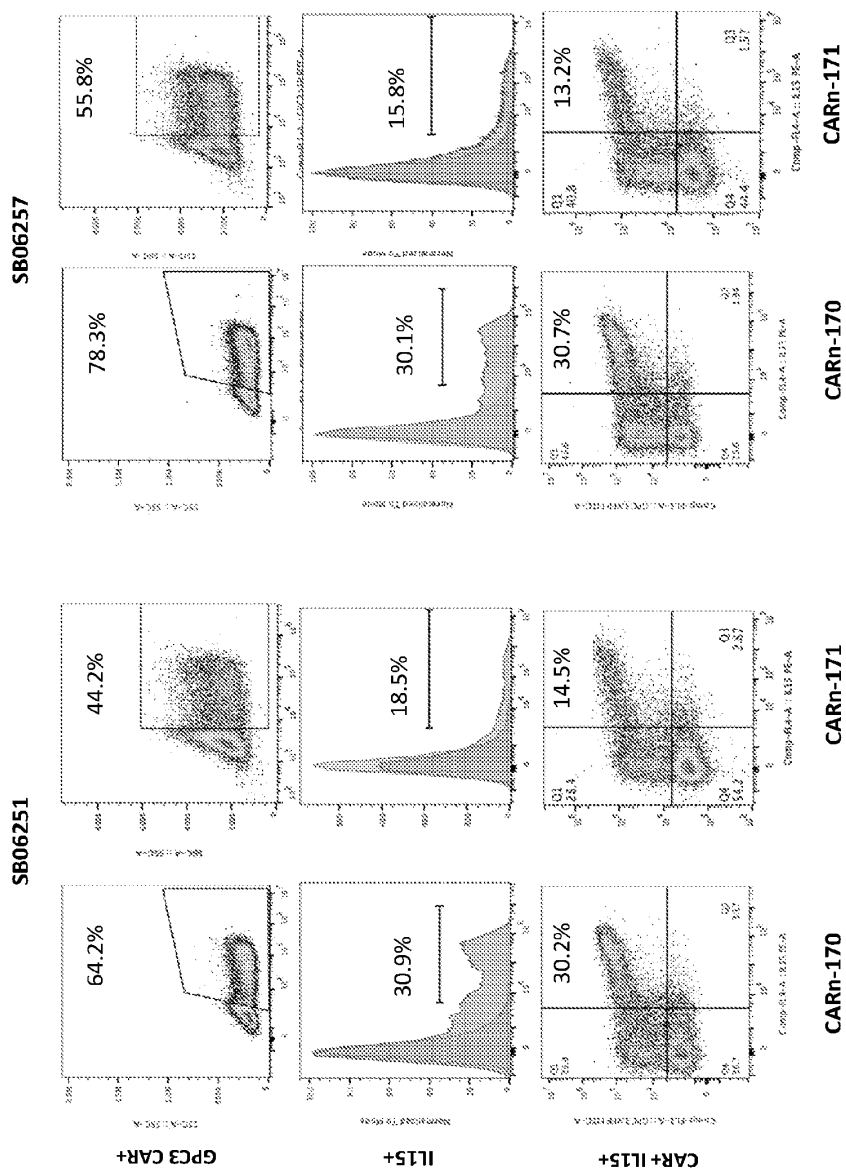


FIG. 13B

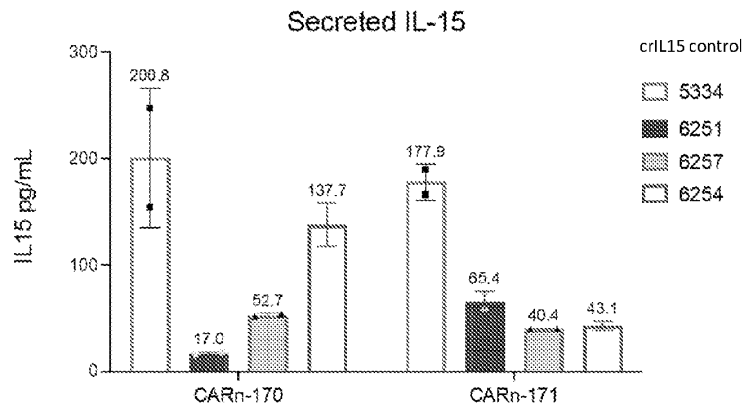


FIG. 14A

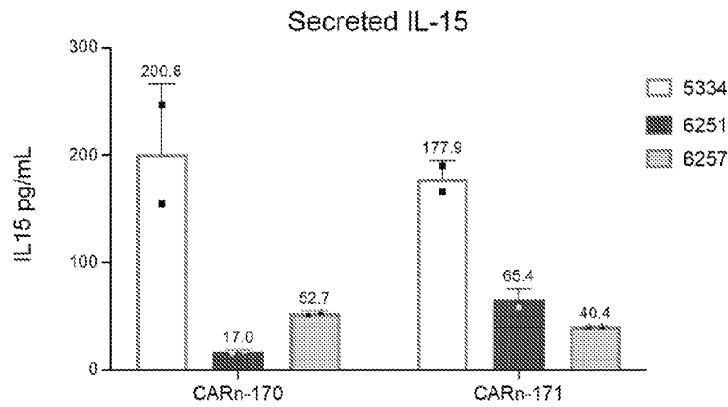


FIG. 14B

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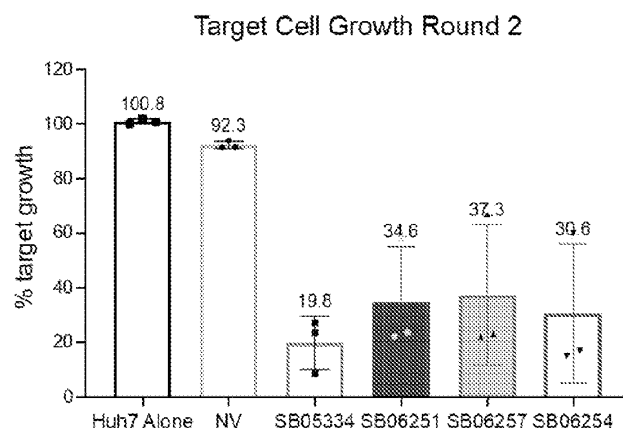


FIG. 15A

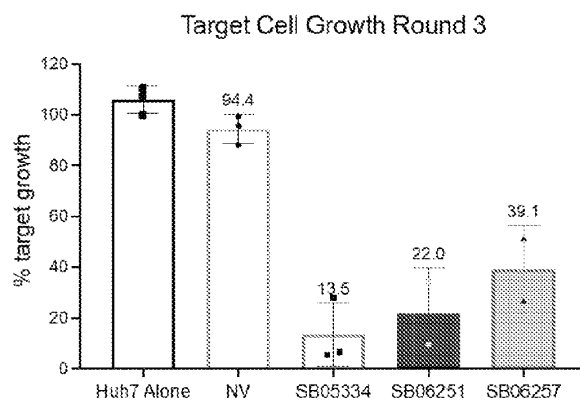


FIG. 15B

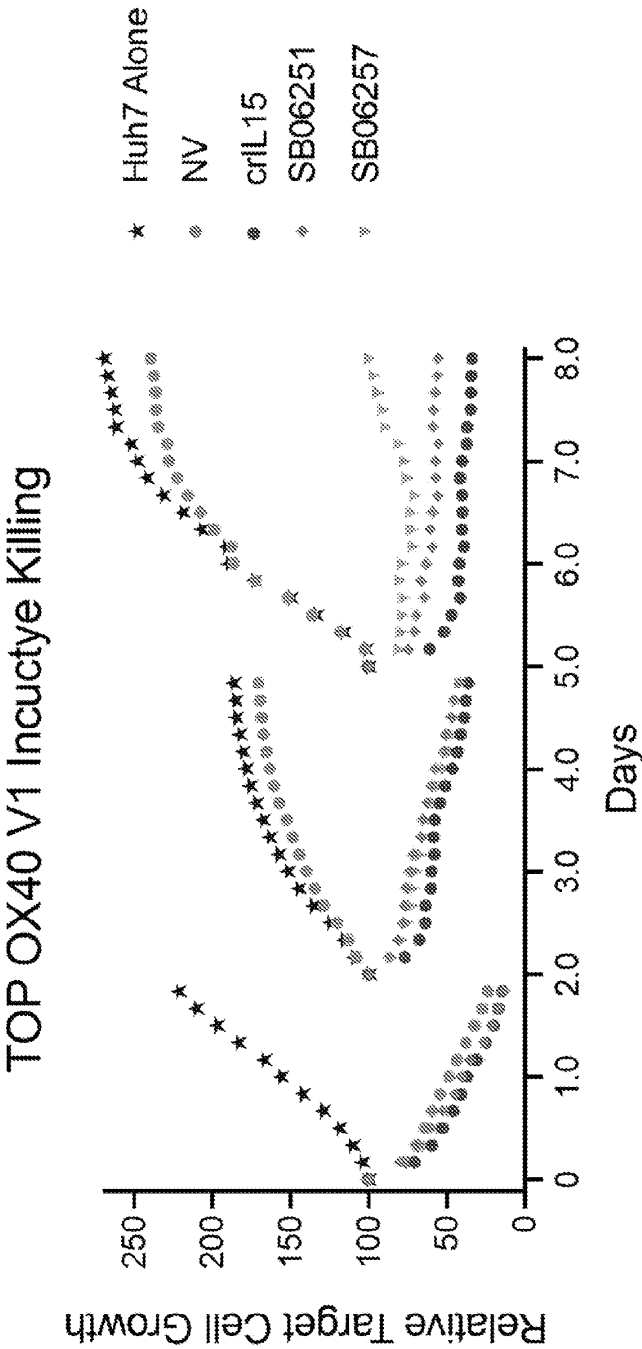


FIG. 16

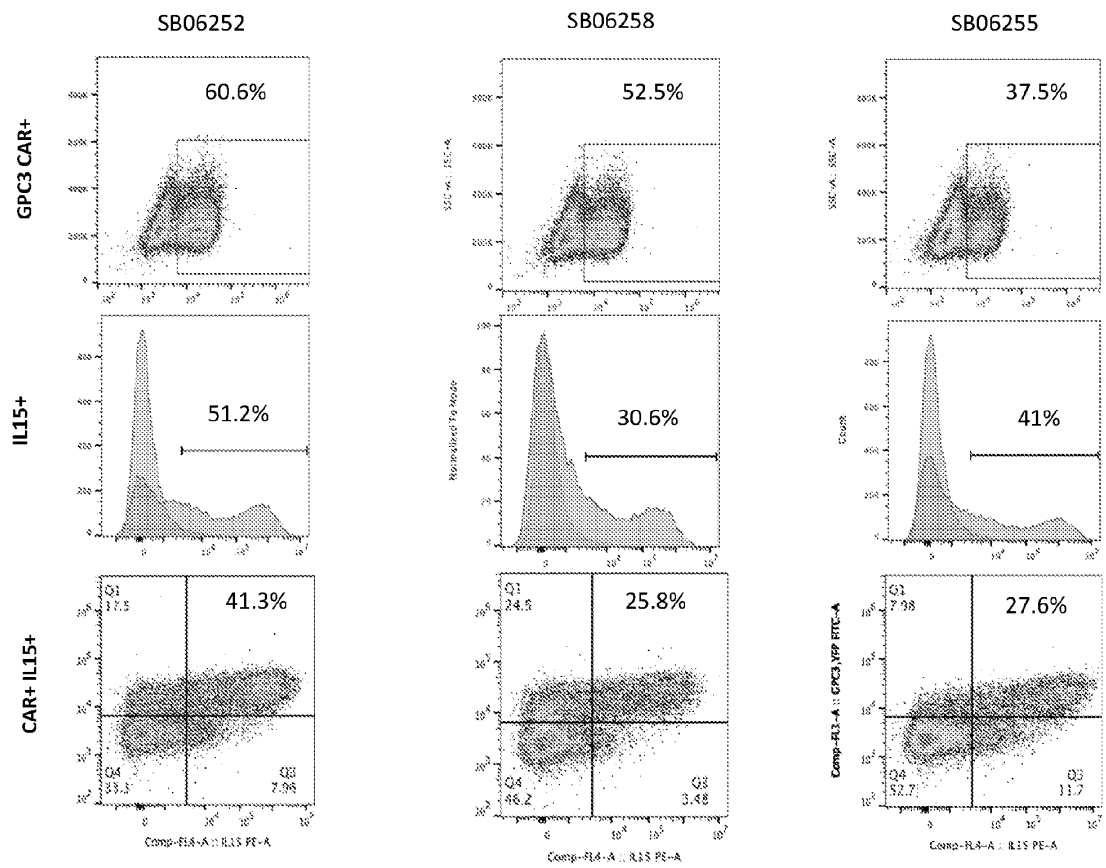


FIG. 17A

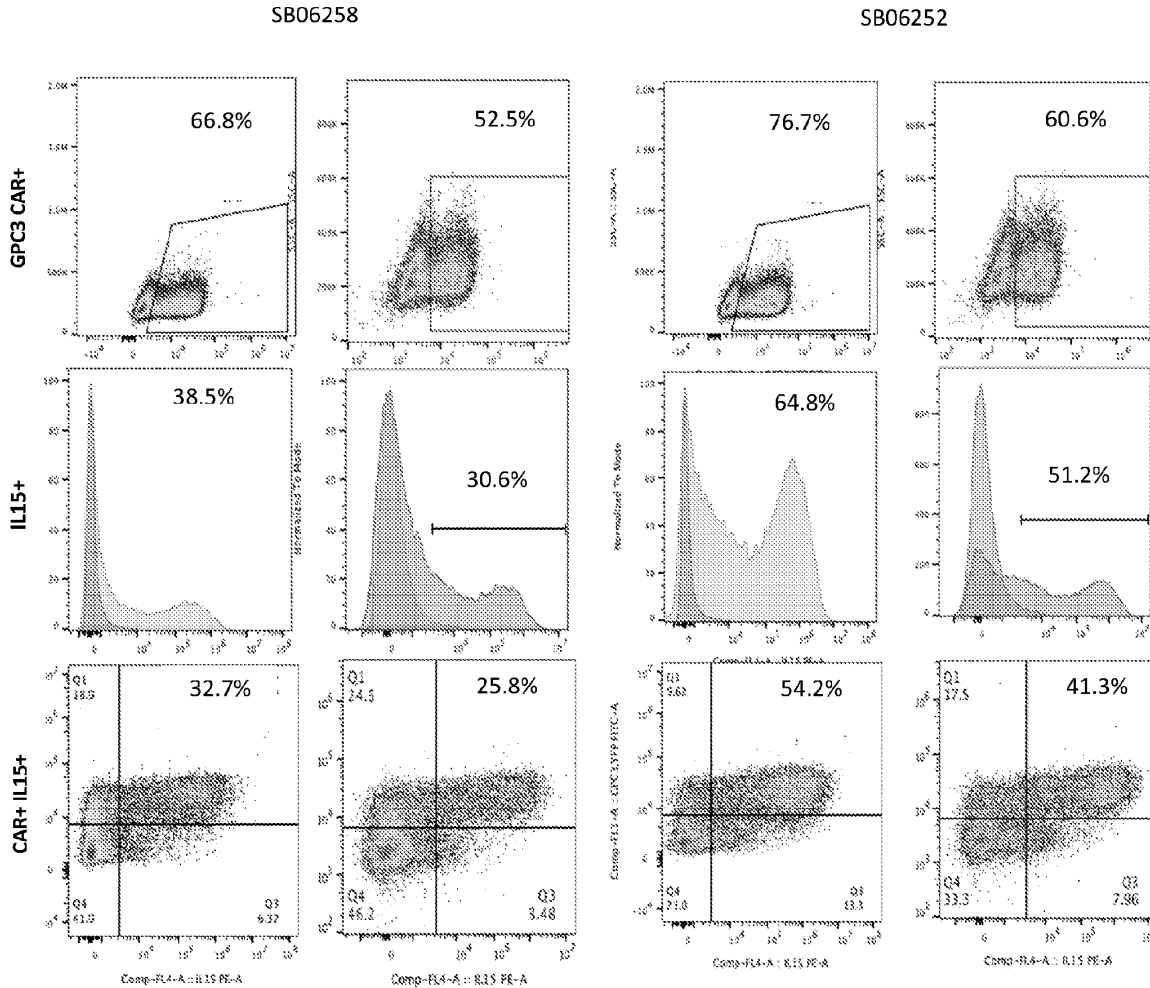


FIG. 17B

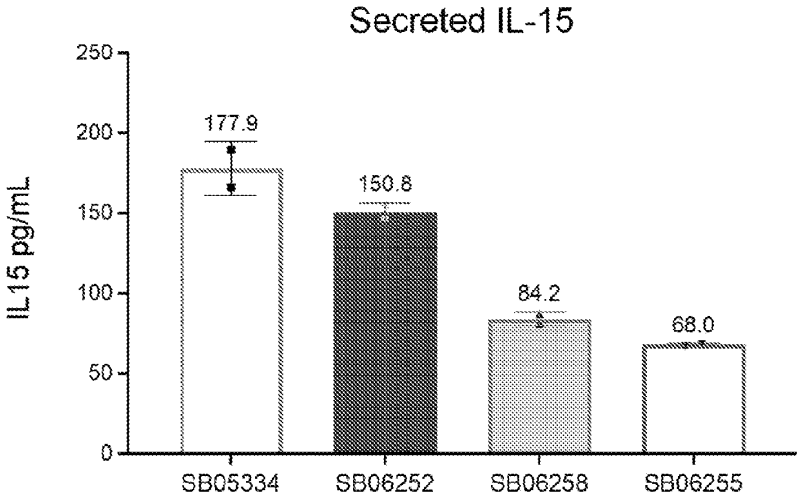


FIG. 18A

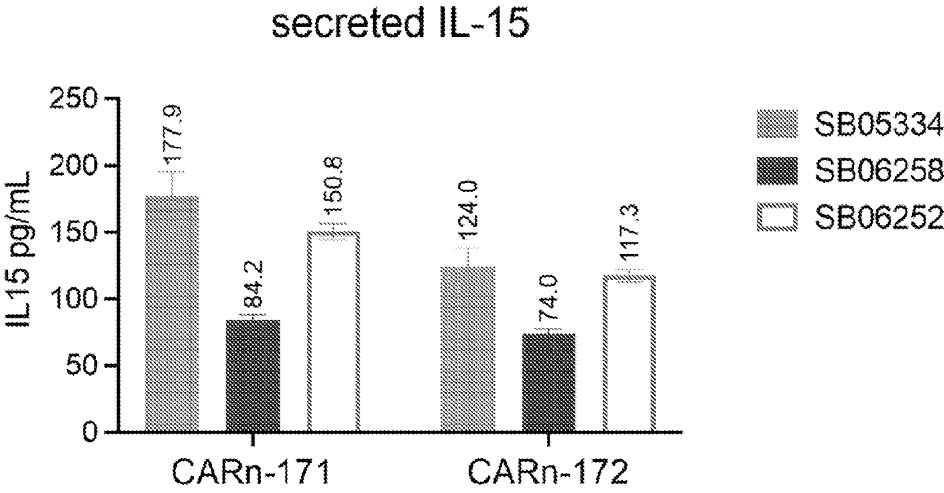


FIG. 18B

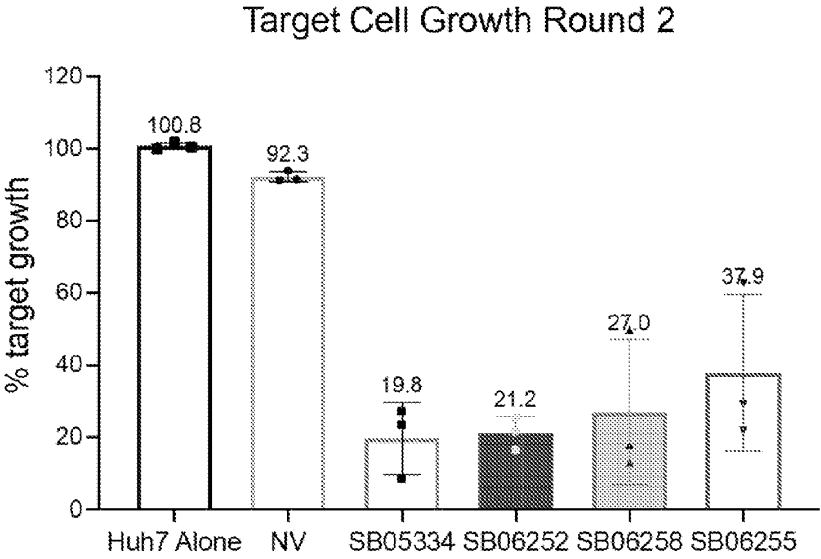


FIG. 19A

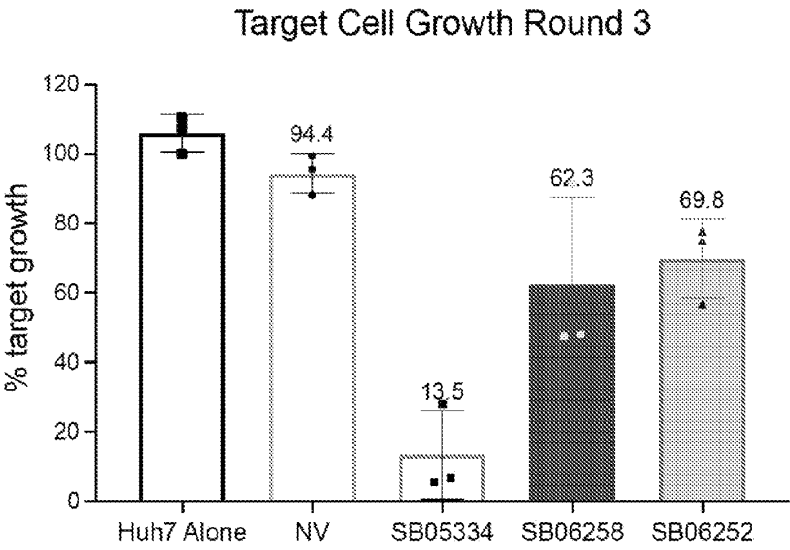


FIG. 19B

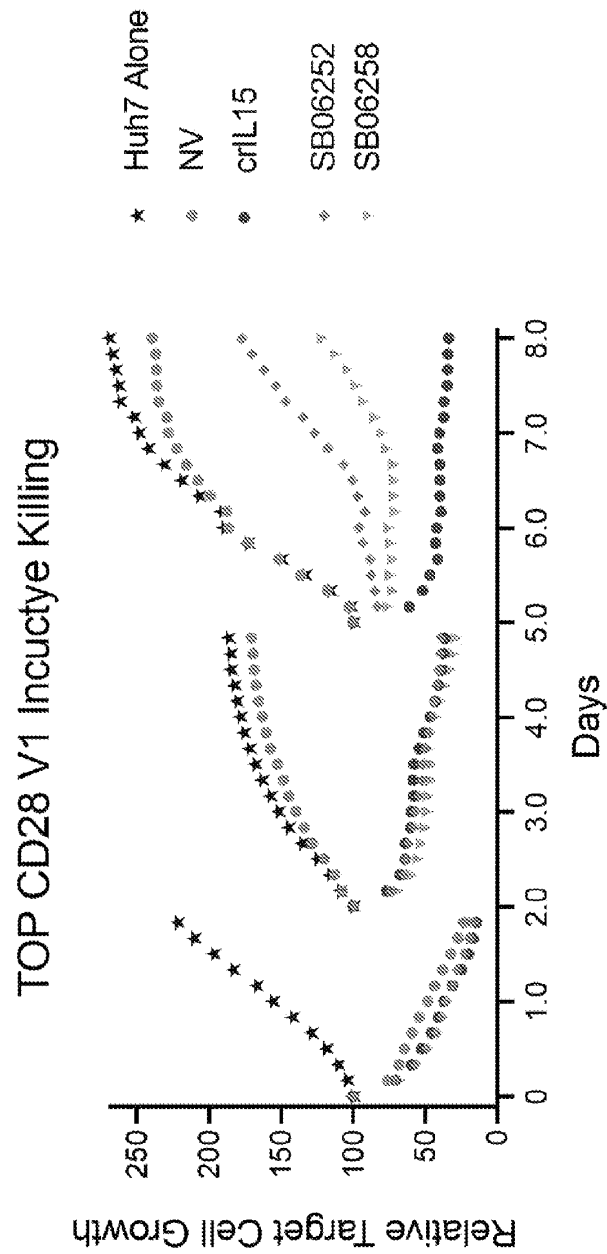


FIG. 20

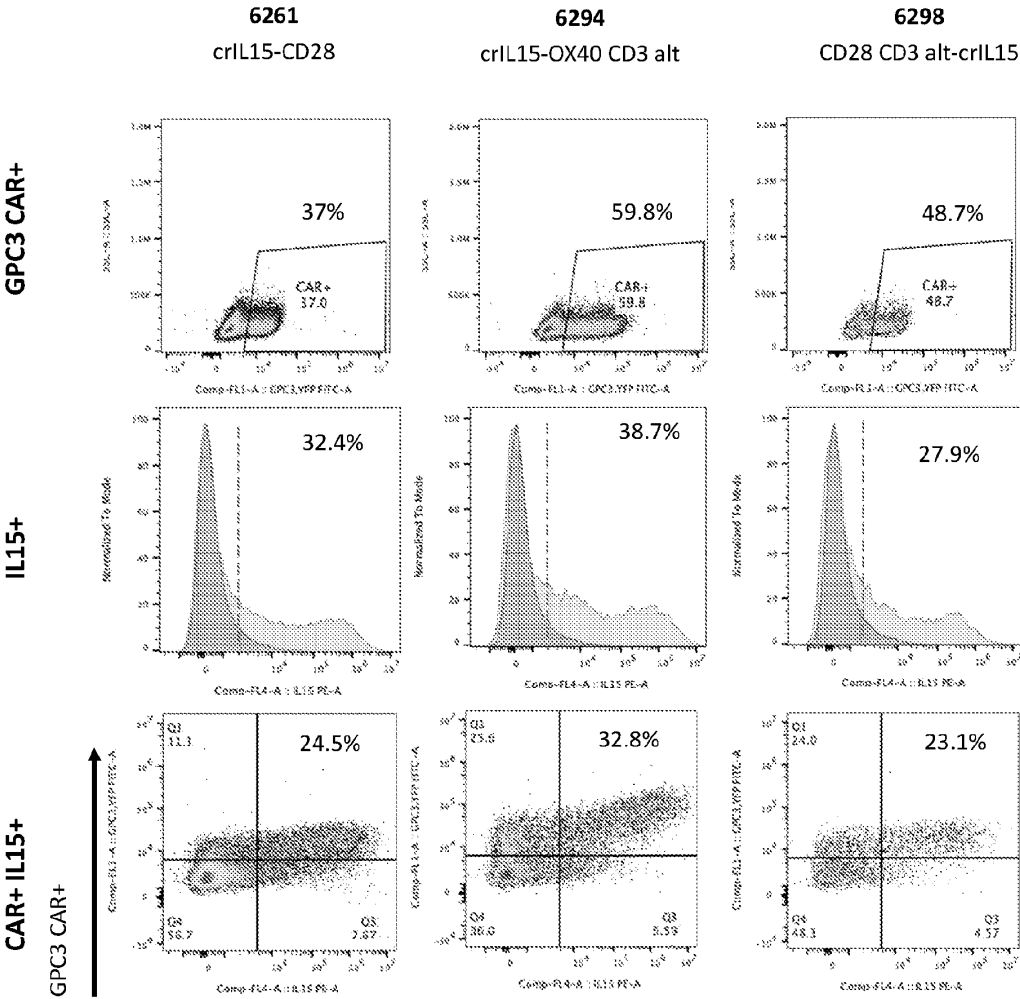


FIG. 21A

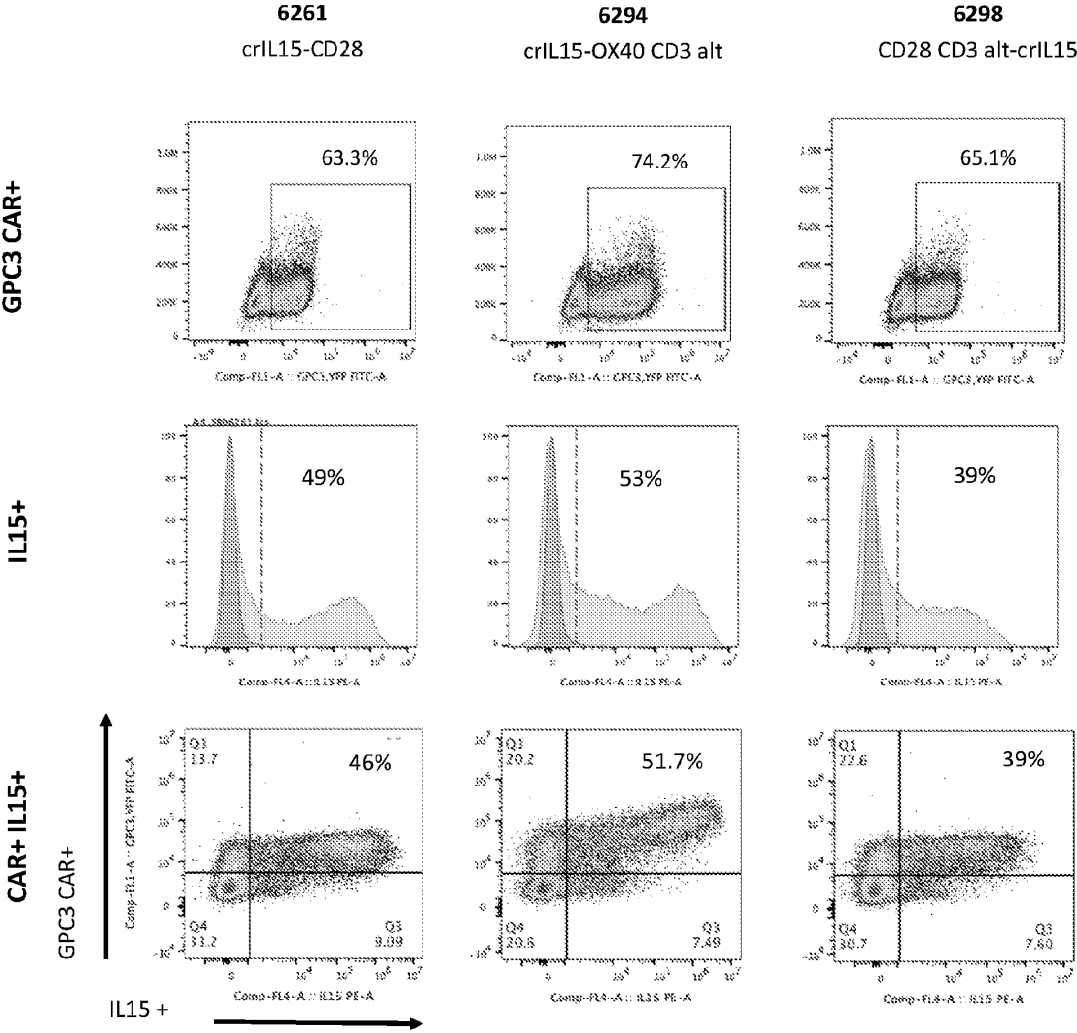


FIG. 21B

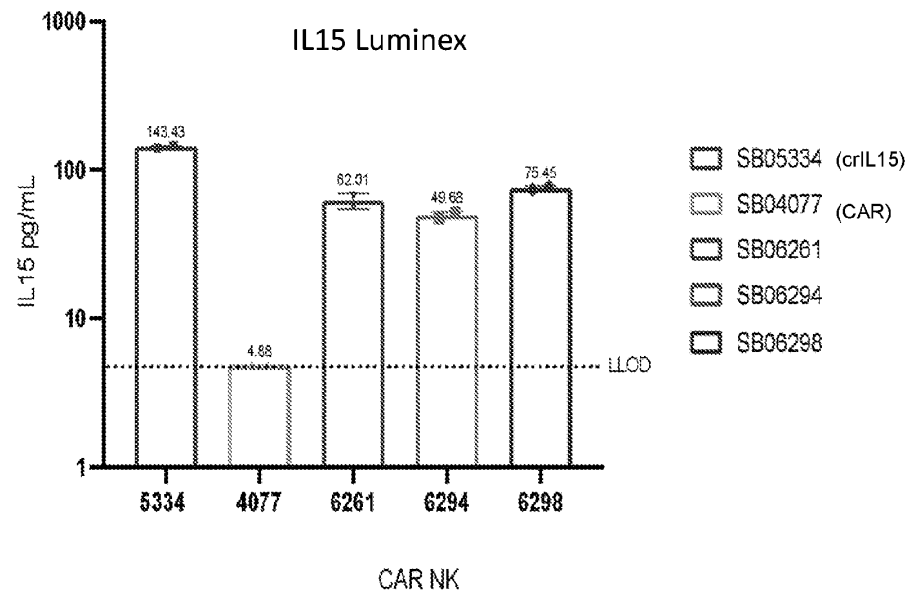


FIG. 22A

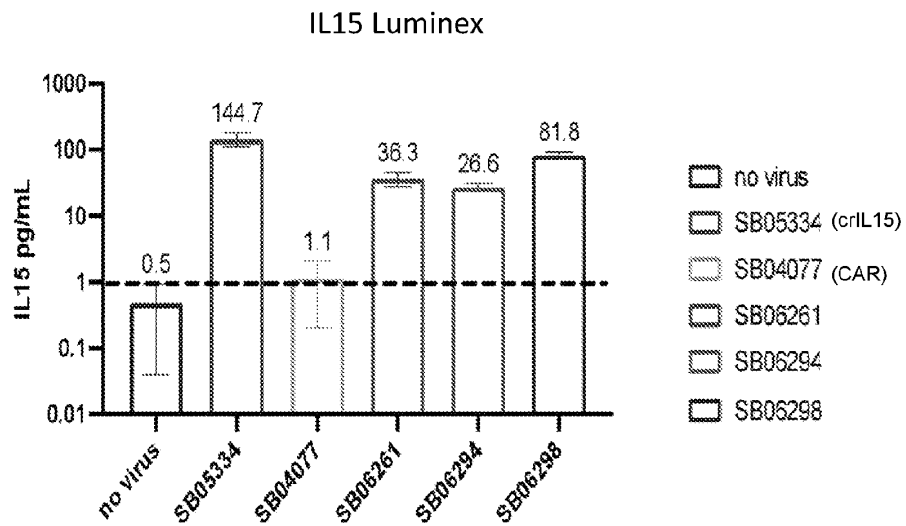


FIG. 22B

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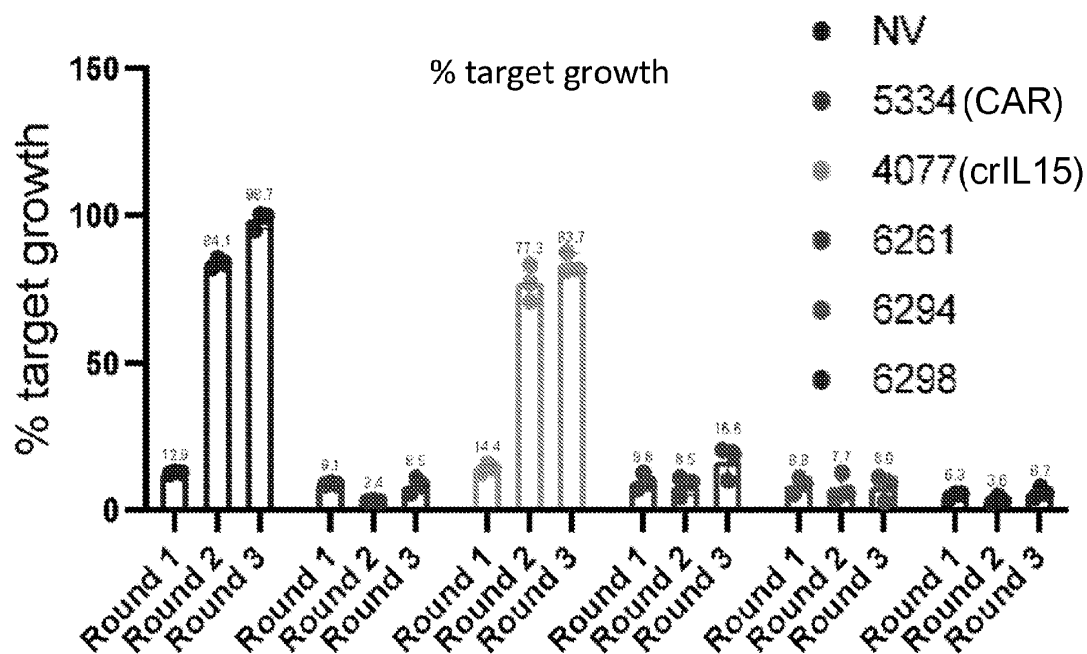


FIG. 23A

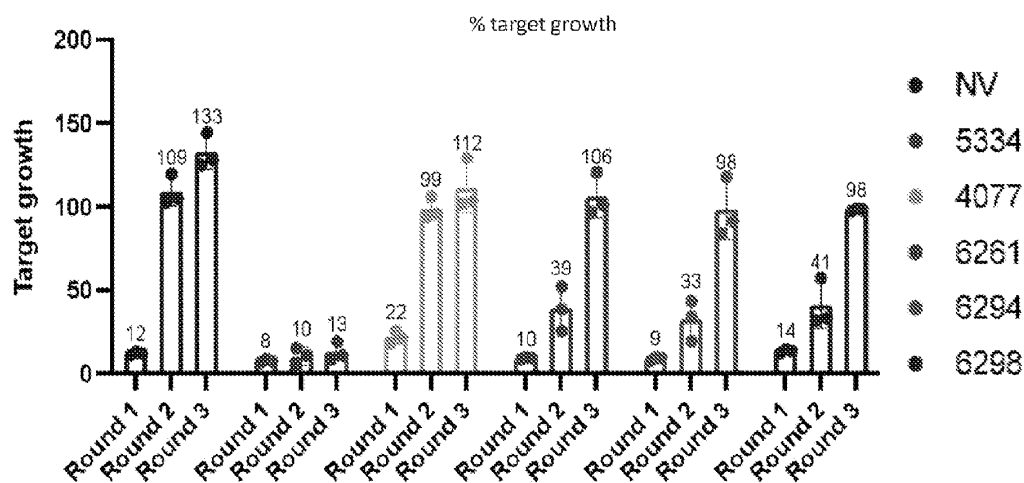


FIG. 23B

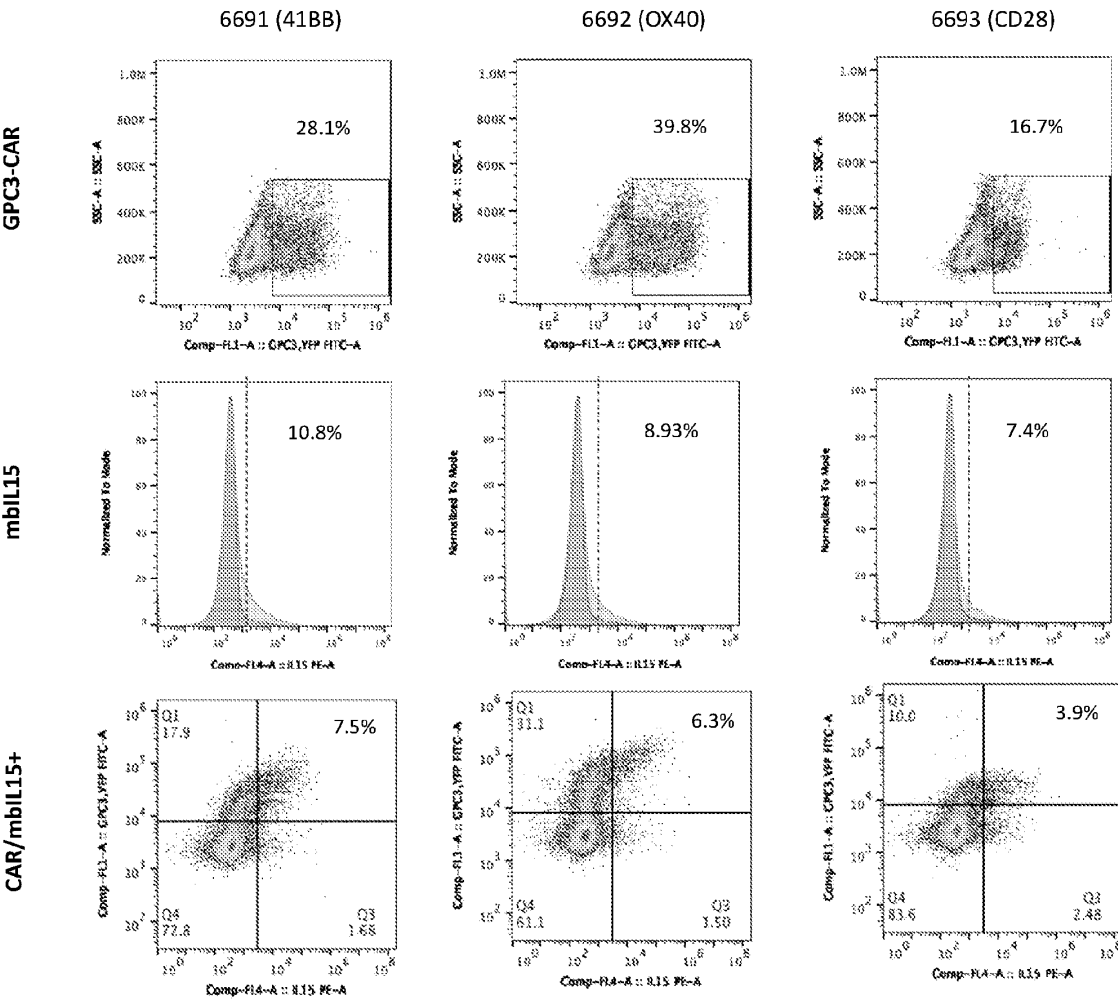


FIG. 24A

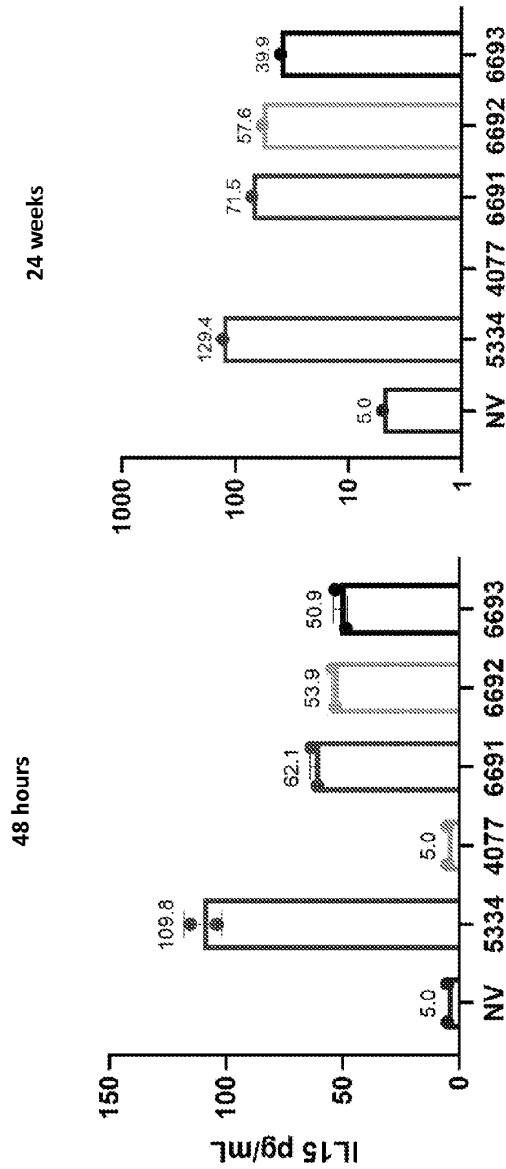


FIG. 24B

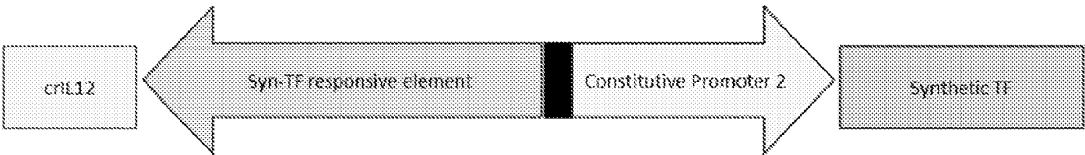
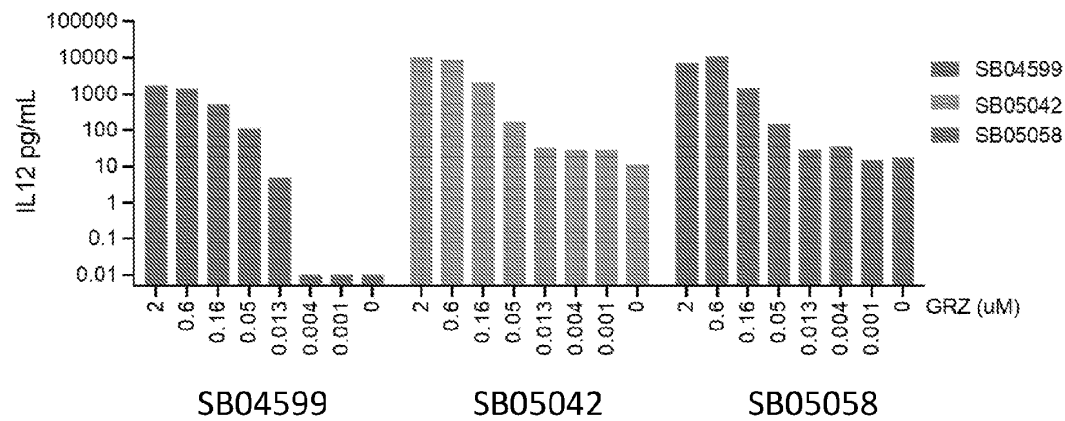


FIG. 25



Fold-change at 0.16 uM*	-	~180	~84
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FIG. 26

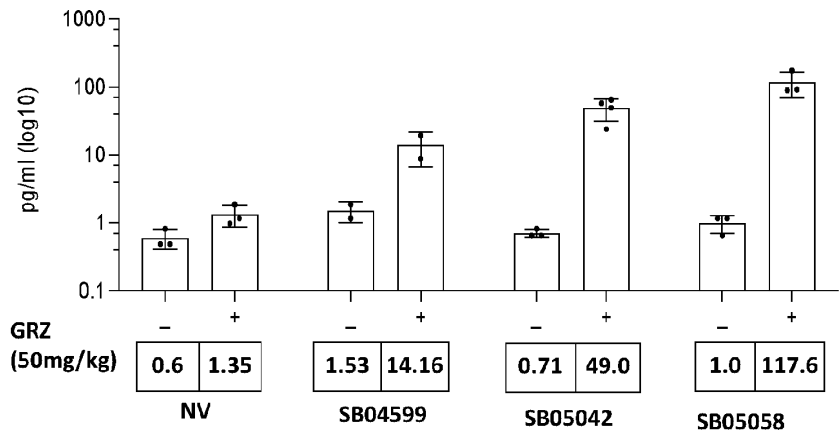


FIG. 27A

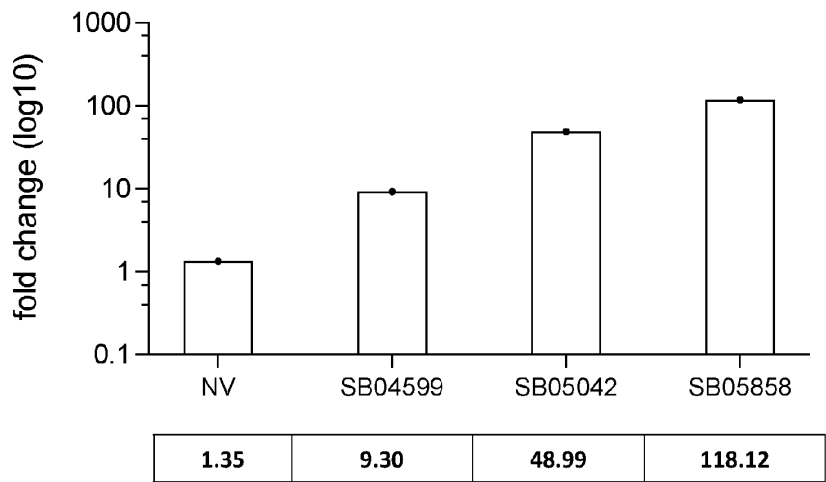


FIG. 27B

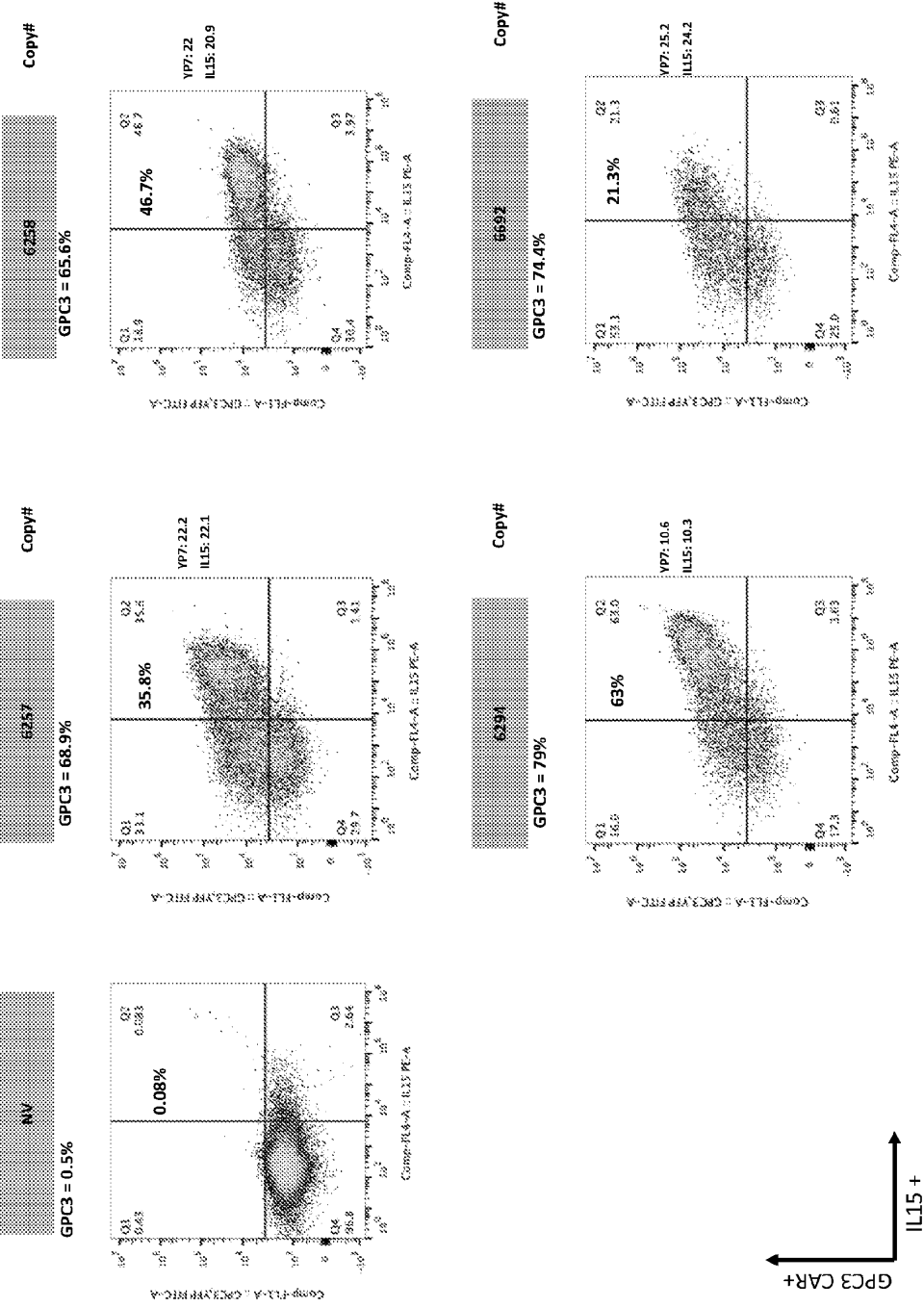


FIG. 28A

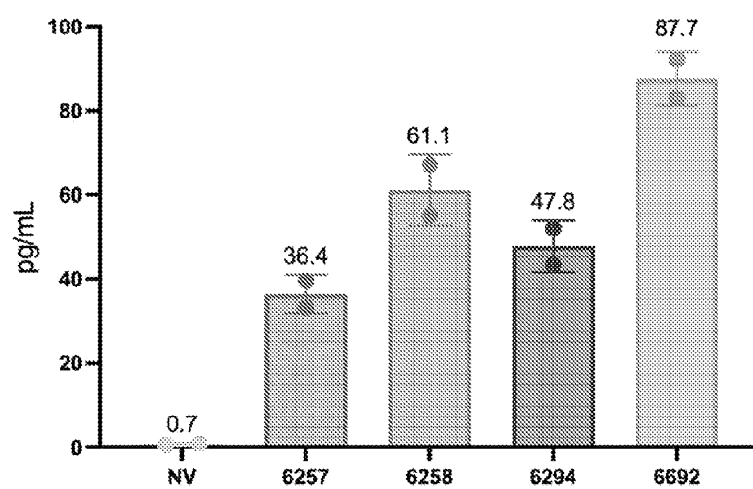


FIG. 28B

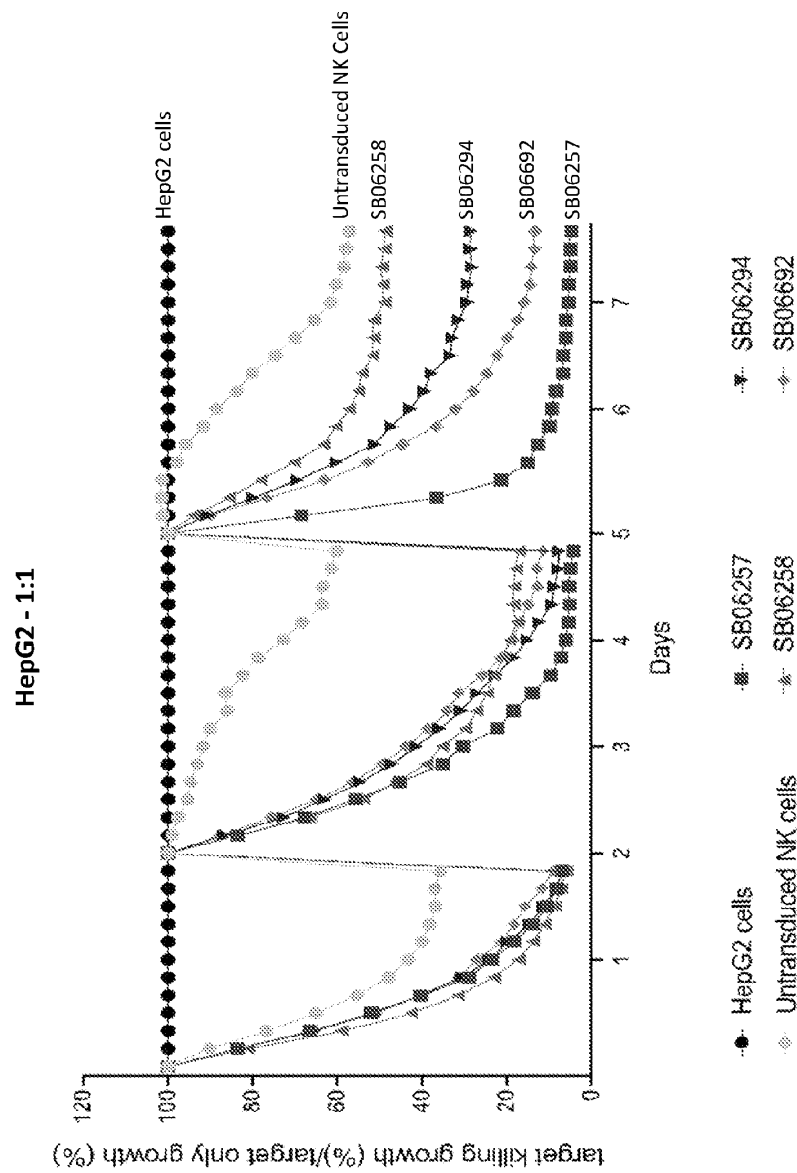


FIG. 28C

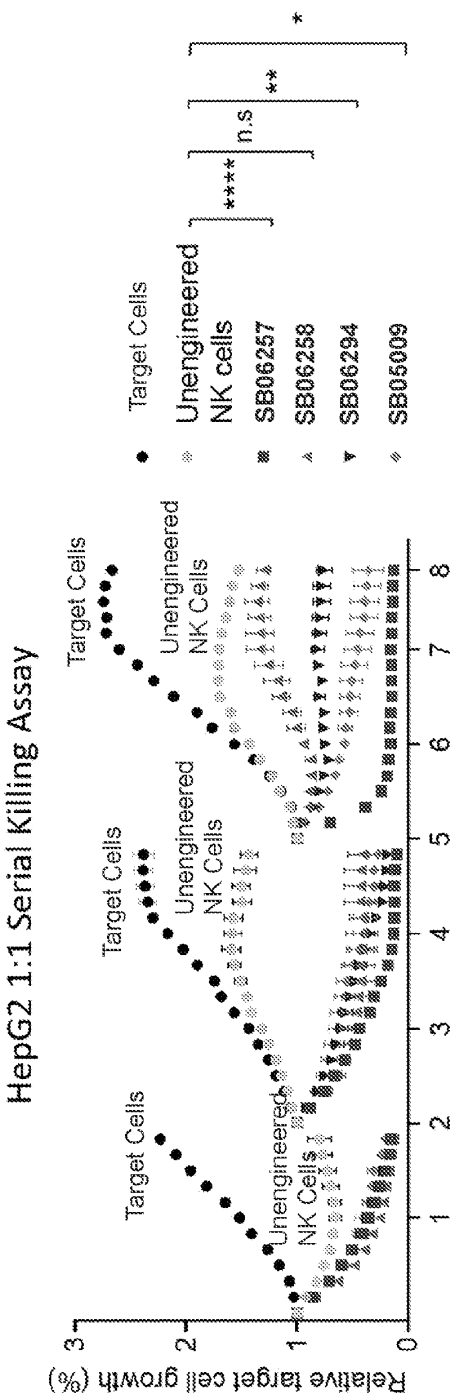


FIG. 29A

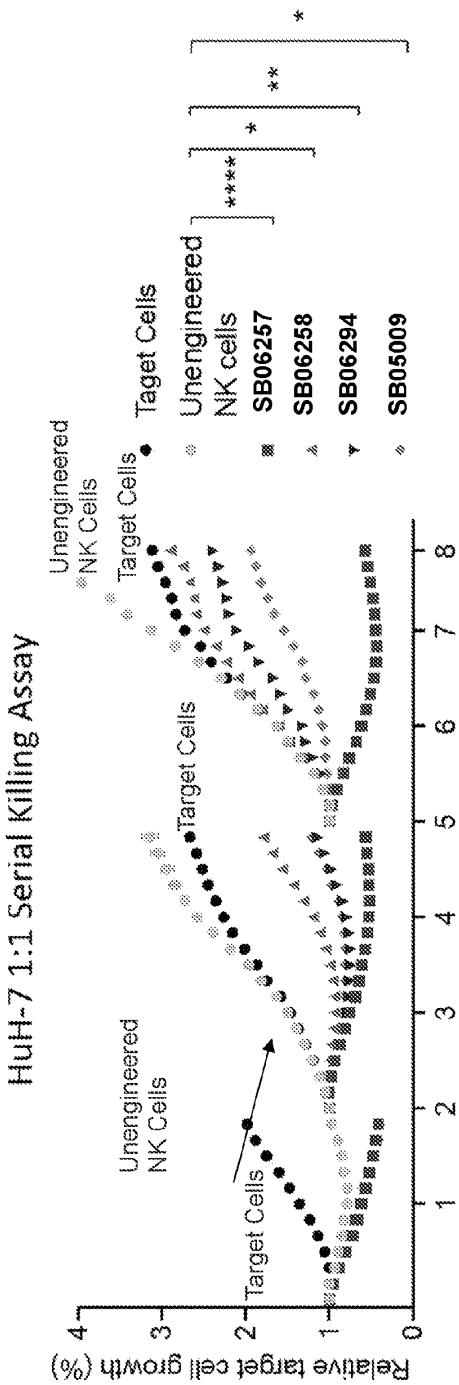


FIG. 29B

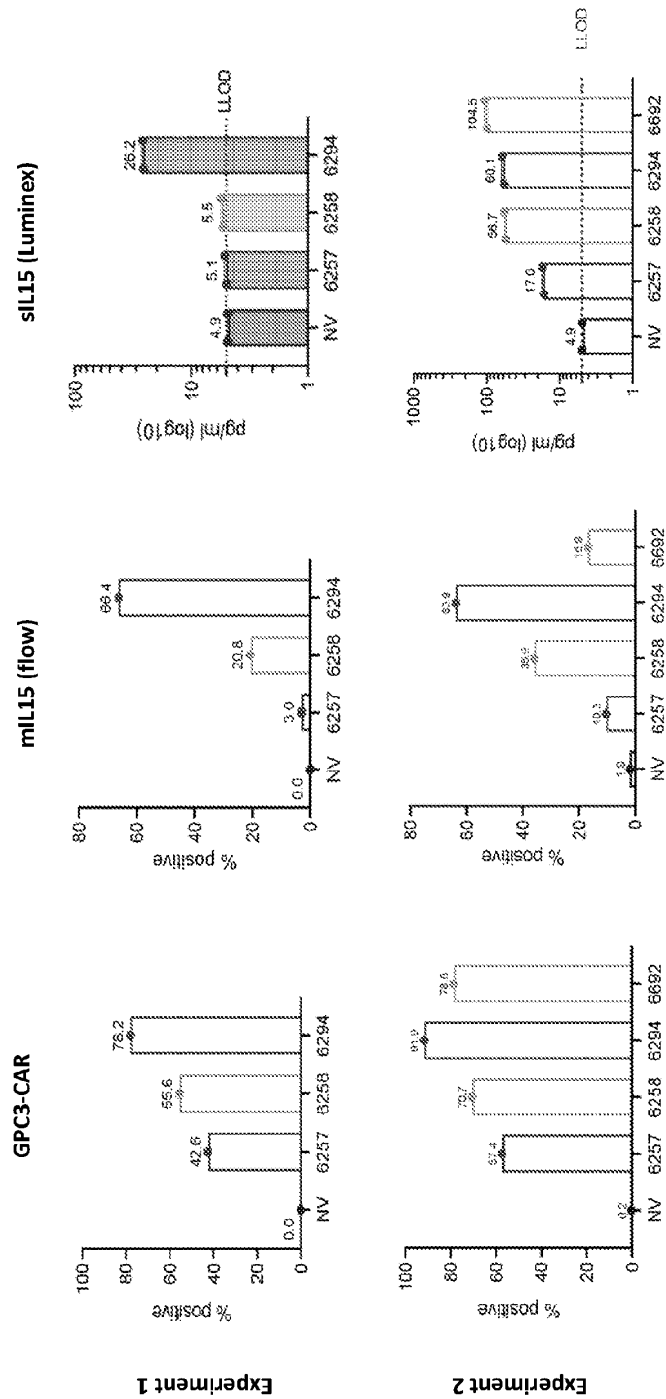


FIG. 30A

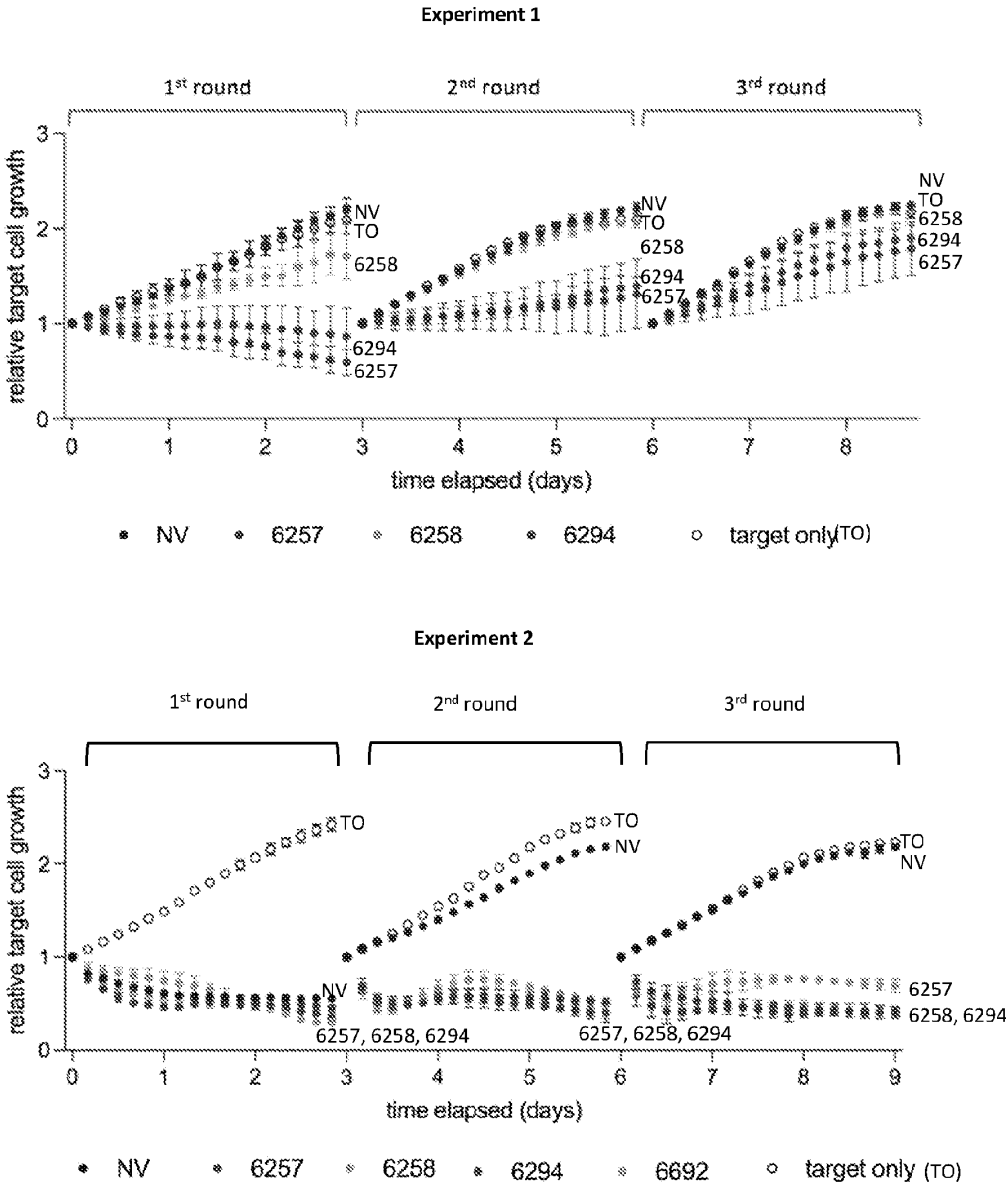


FIG. 30B

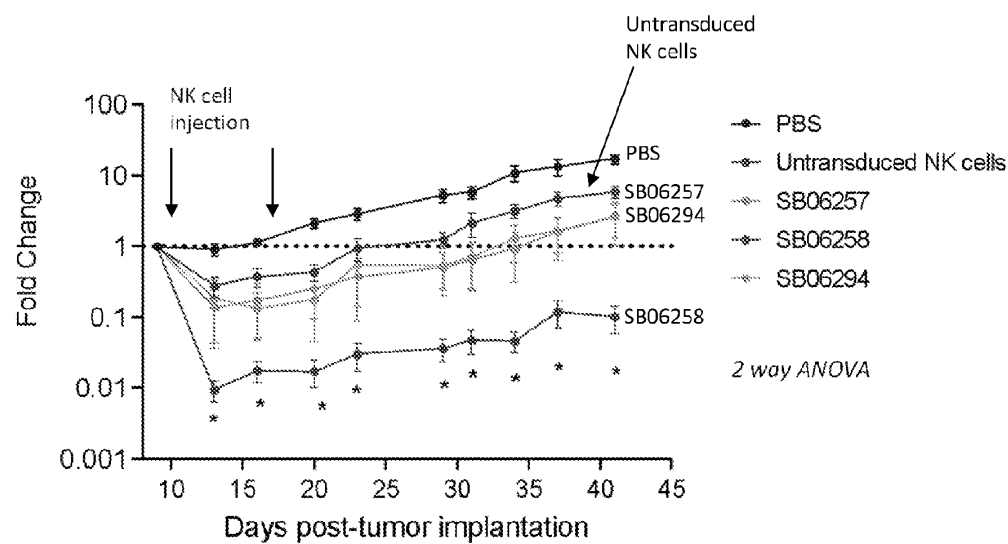


FIG. 31

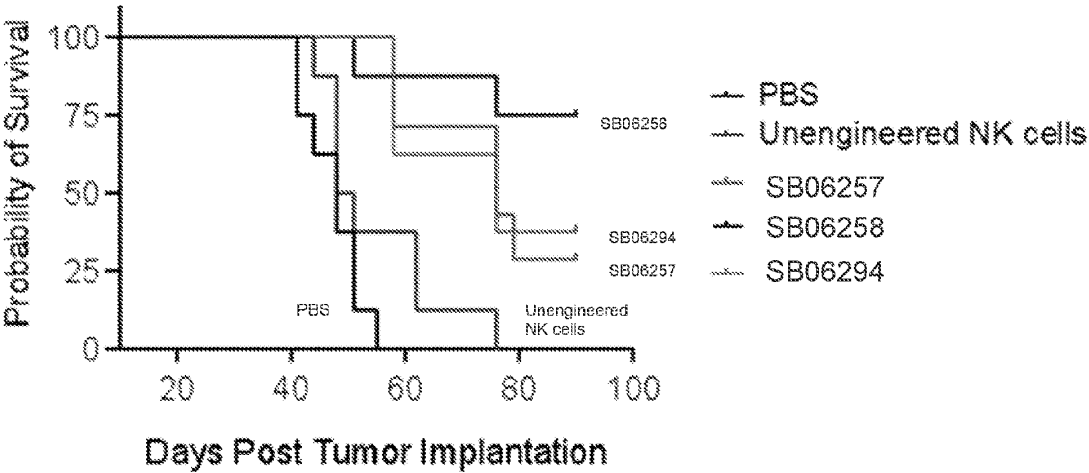


FIG. 32A

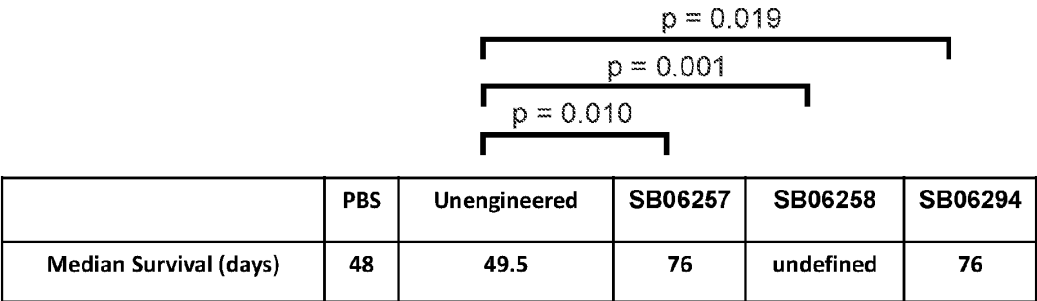


FIG. 32B

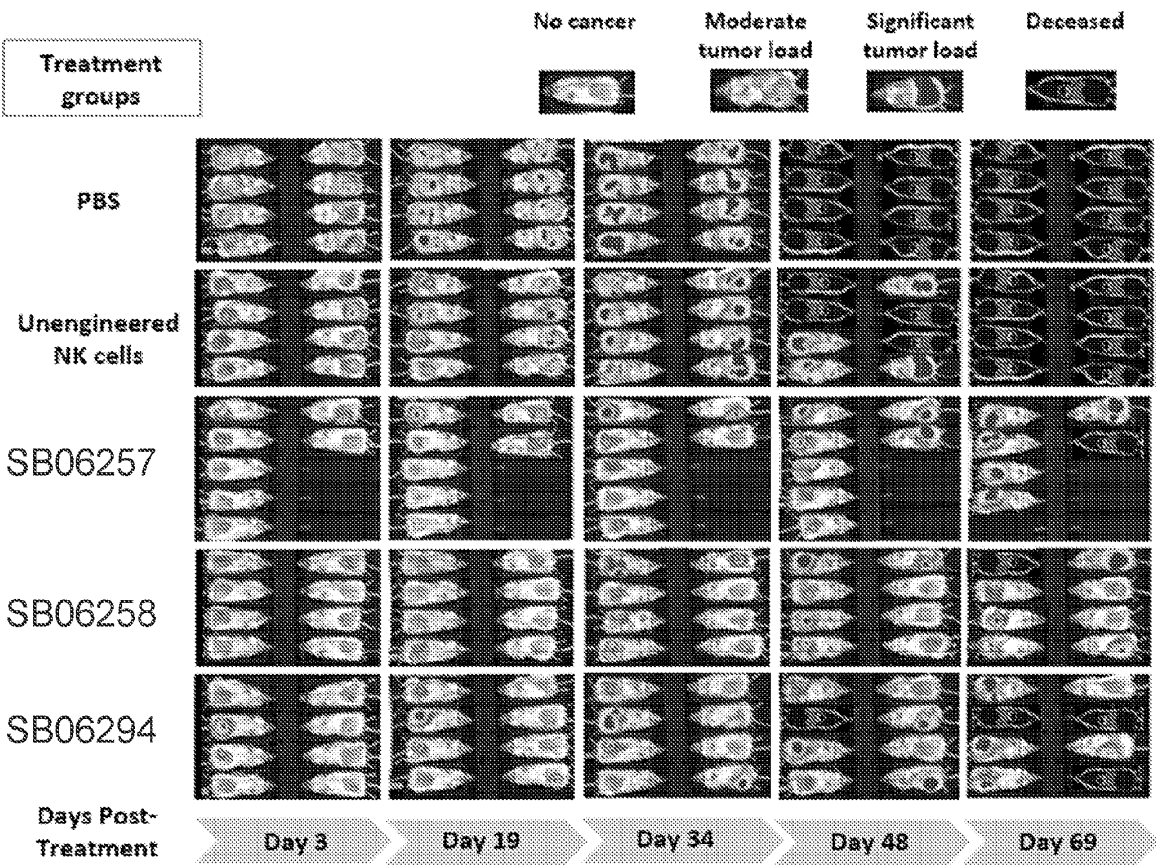


FIG. 33

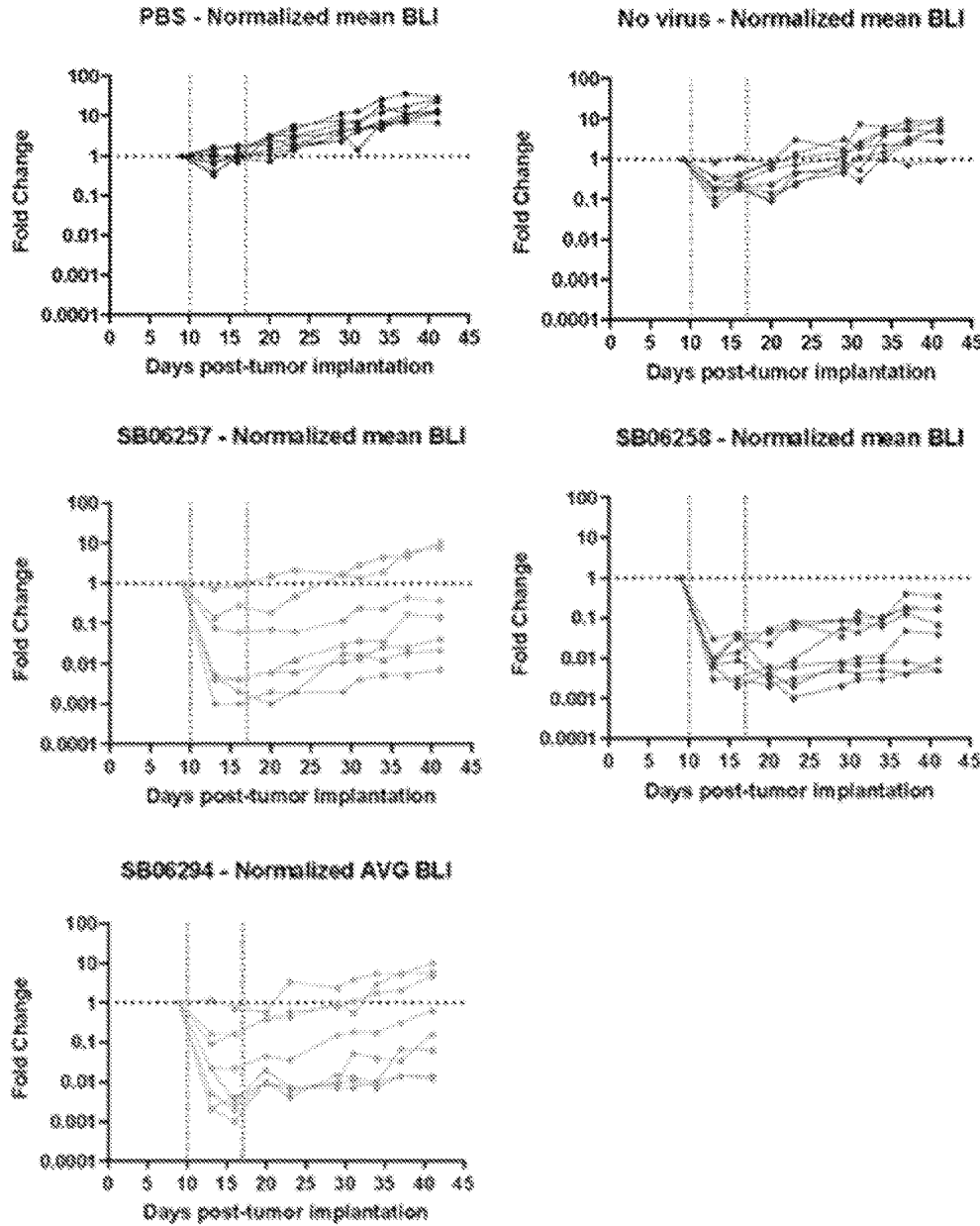


FIG. 34

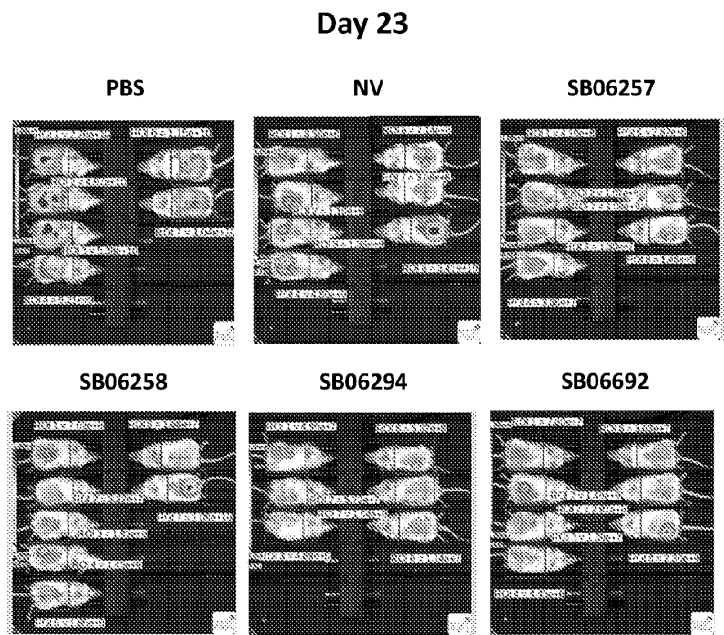


FIG. 35A

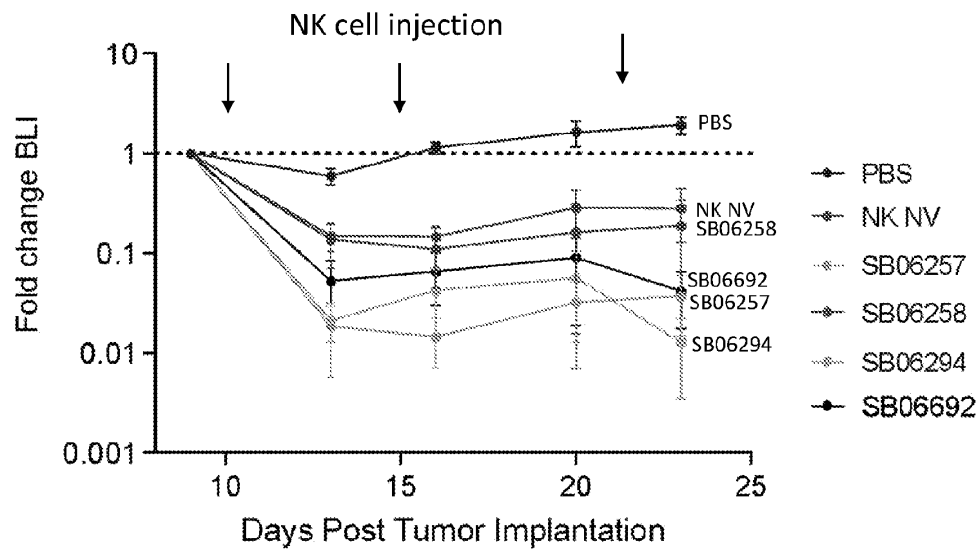


FIG. 35B

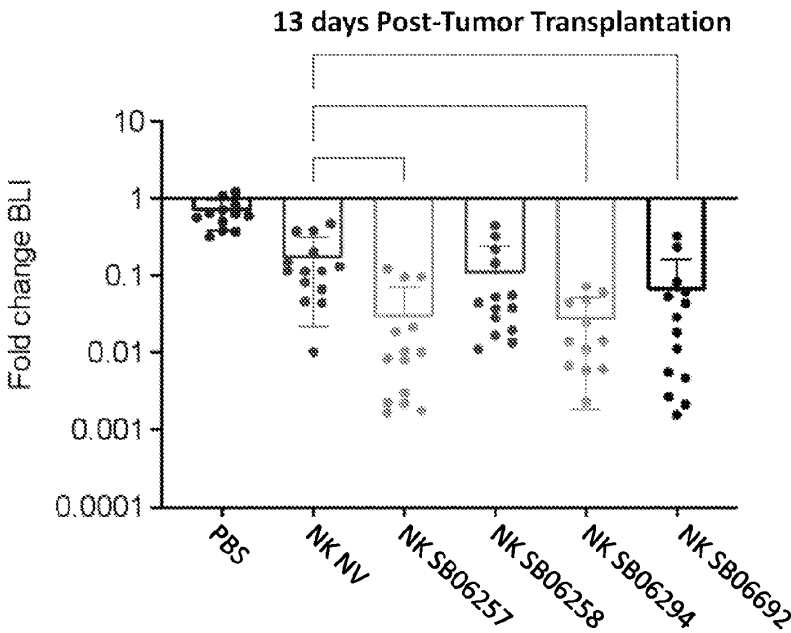


FIG. 36A

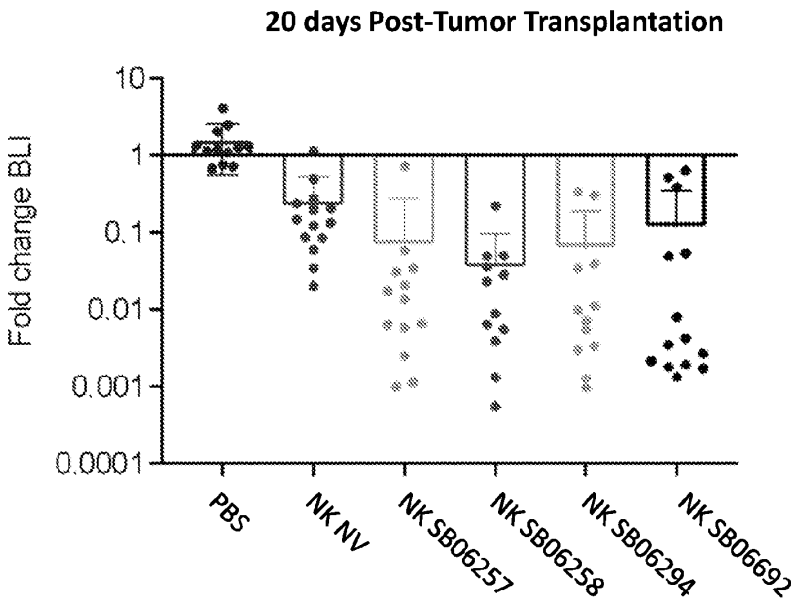


FIG. 36B

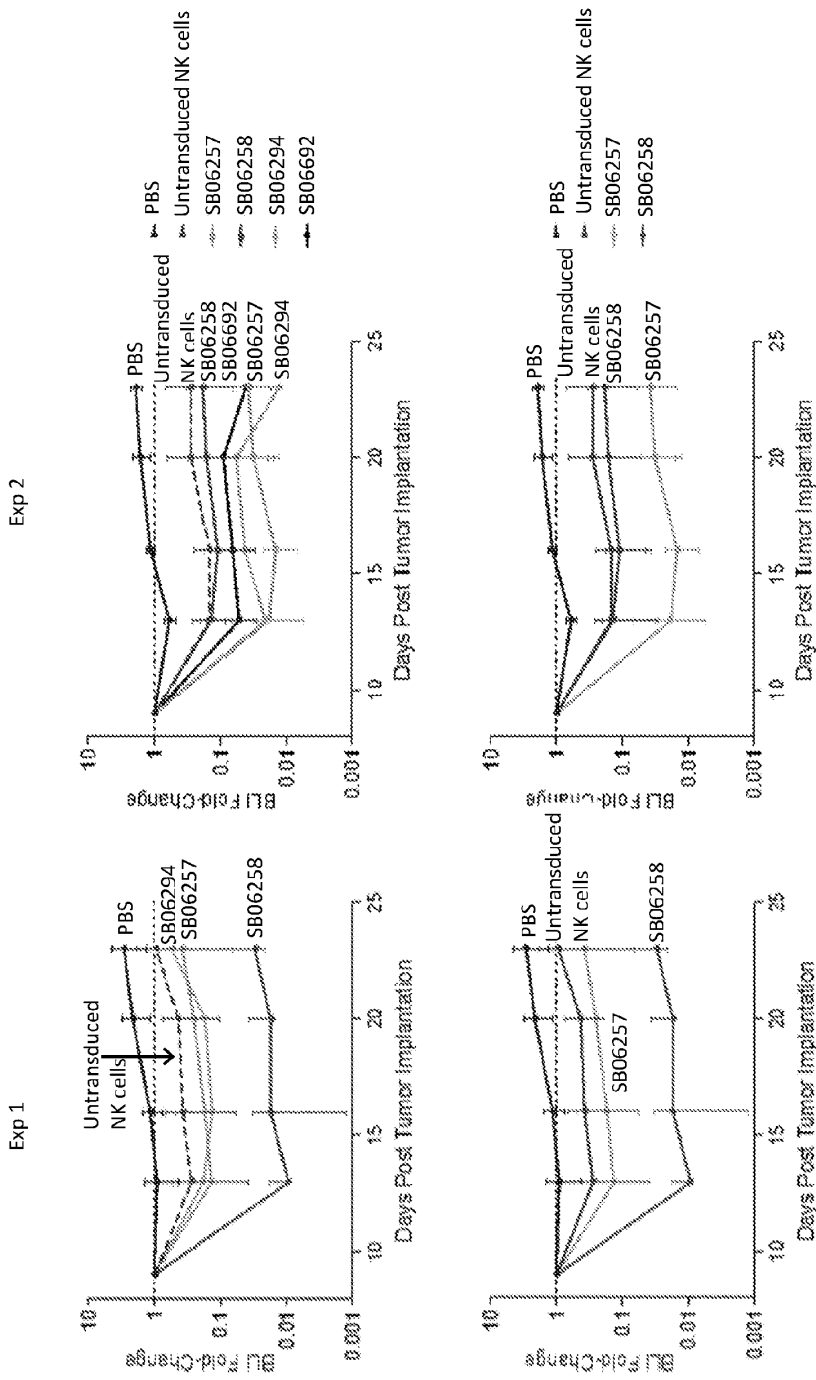
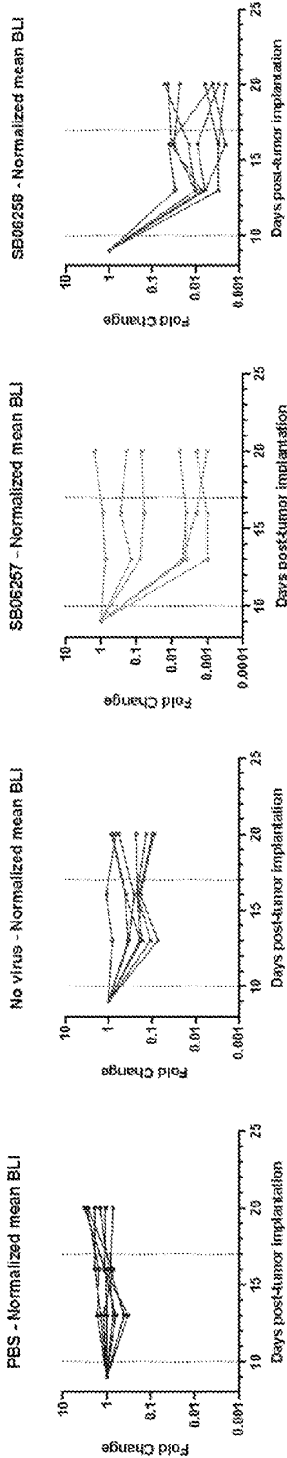


FIG. 37A

Exp 1



Exp 2

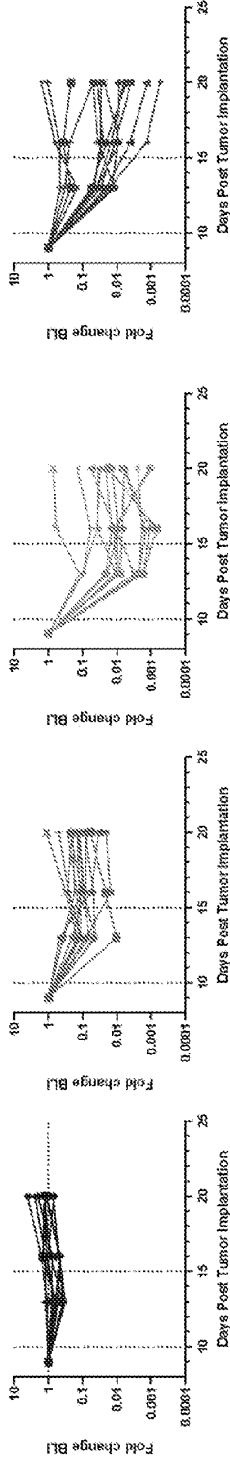


FIG. 37B

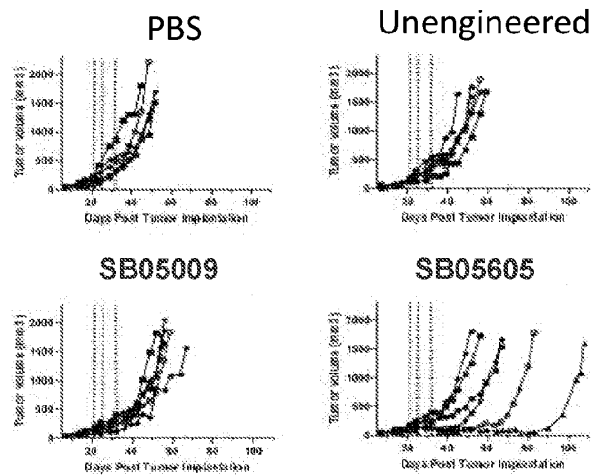
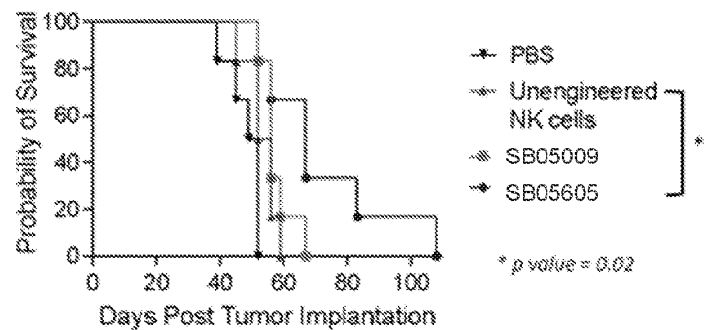


FIG. 38A



	PBS	Unengineered	SB05009	SB05605
Median Survival (days)	50.5	54	56	67

FIG. 38B

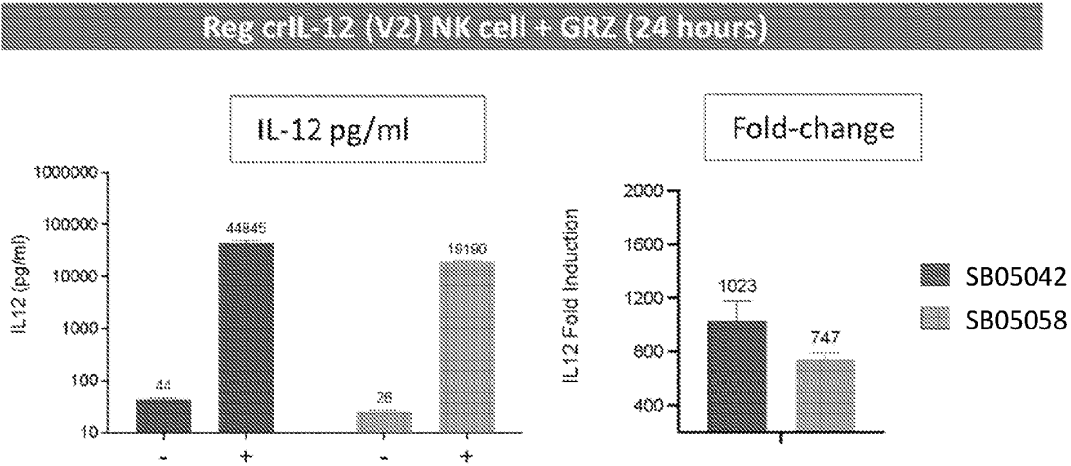


FIG. 39A

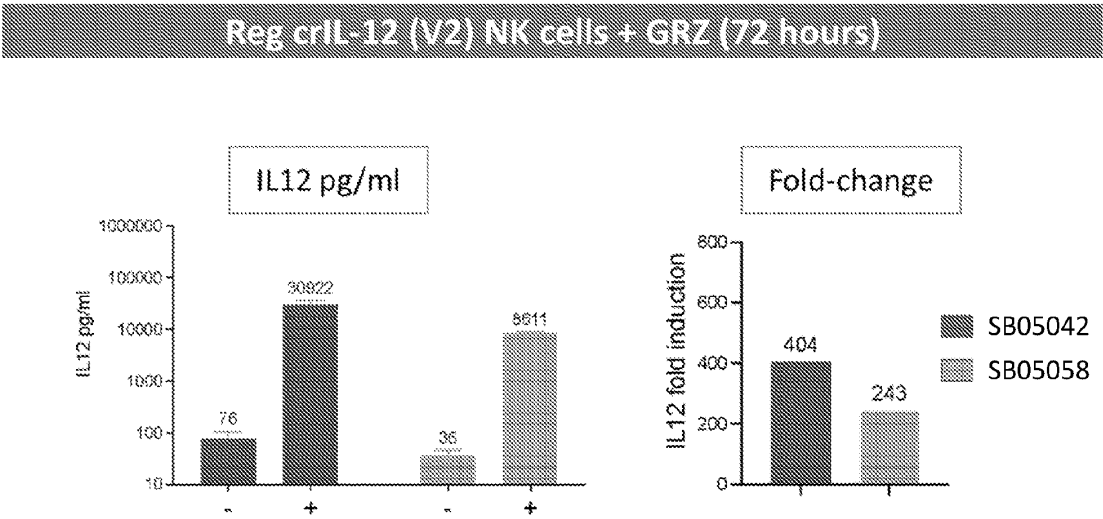


FIG. 39B

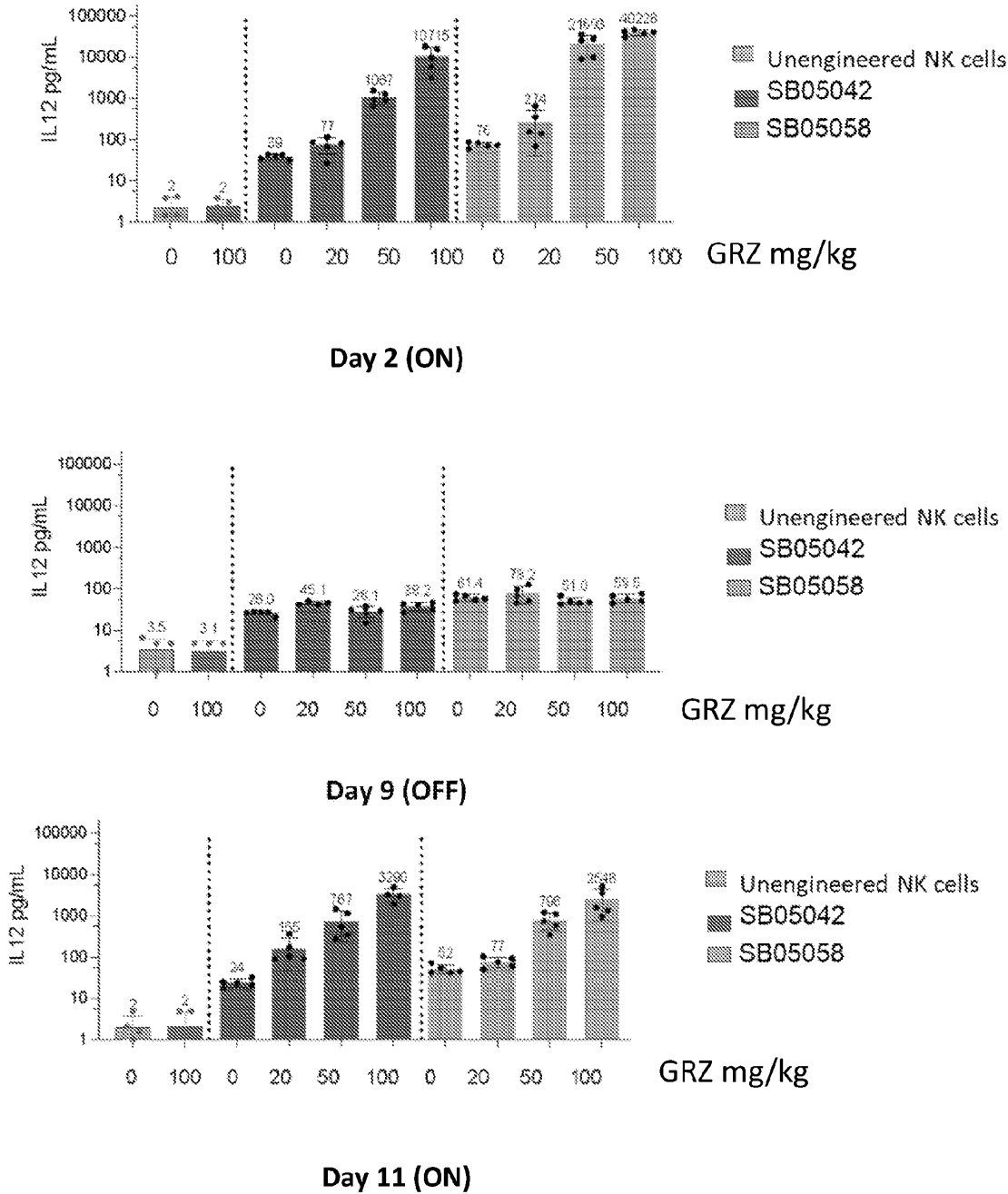


FIG. 40

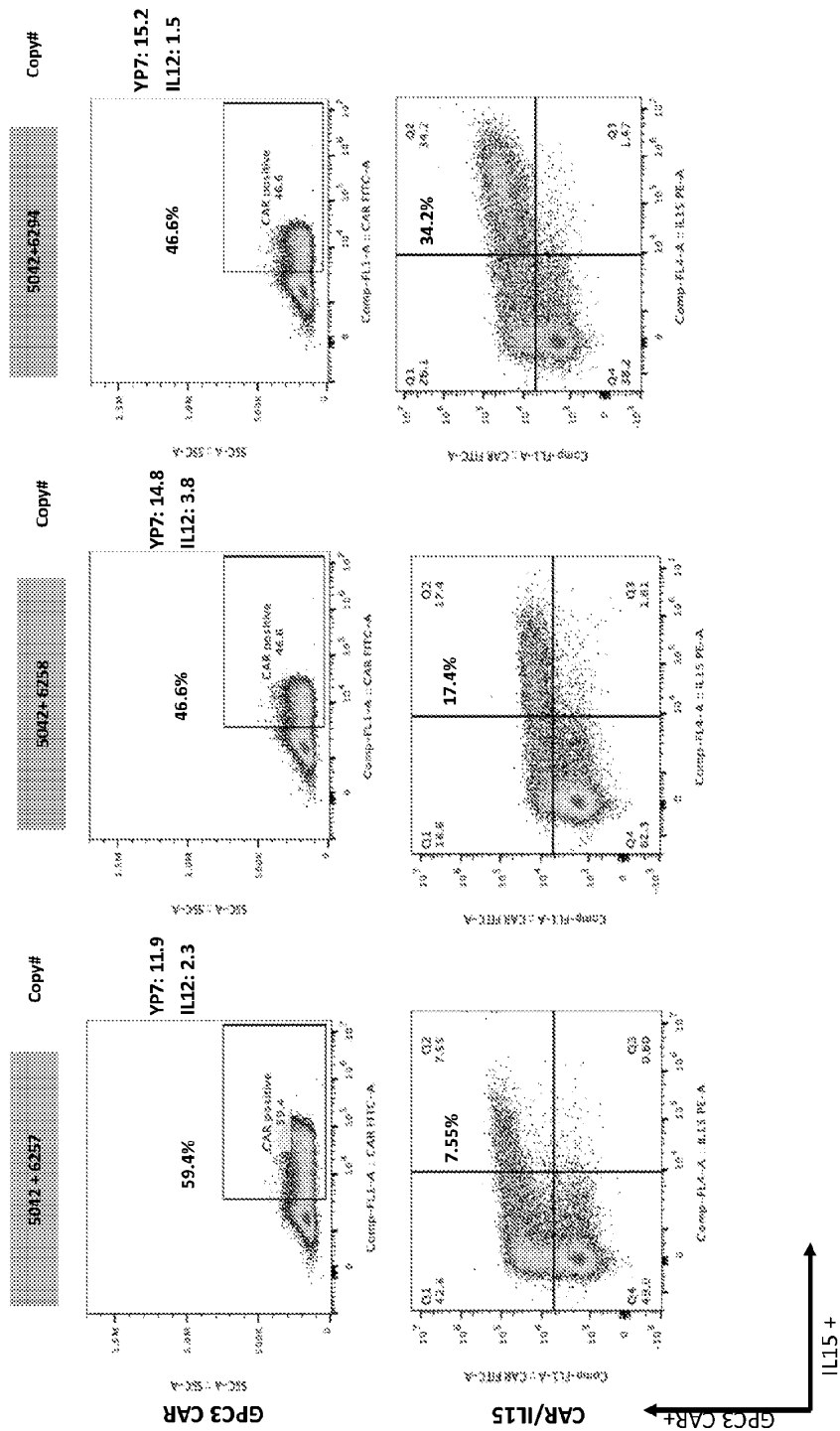


FIG. 41

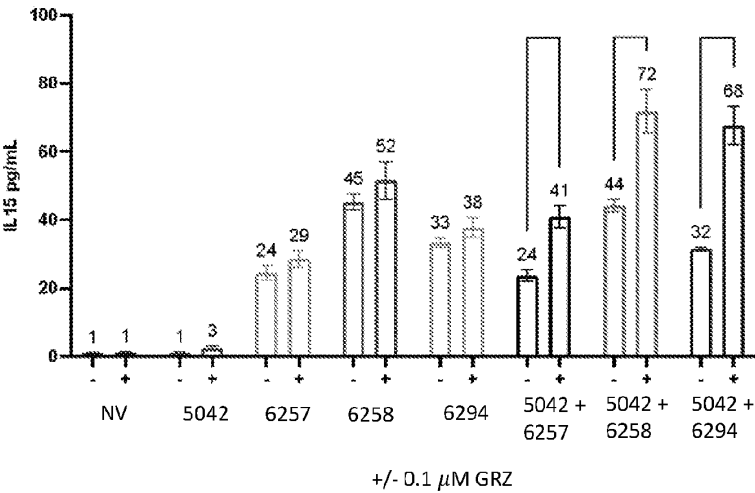


FIG. 42A

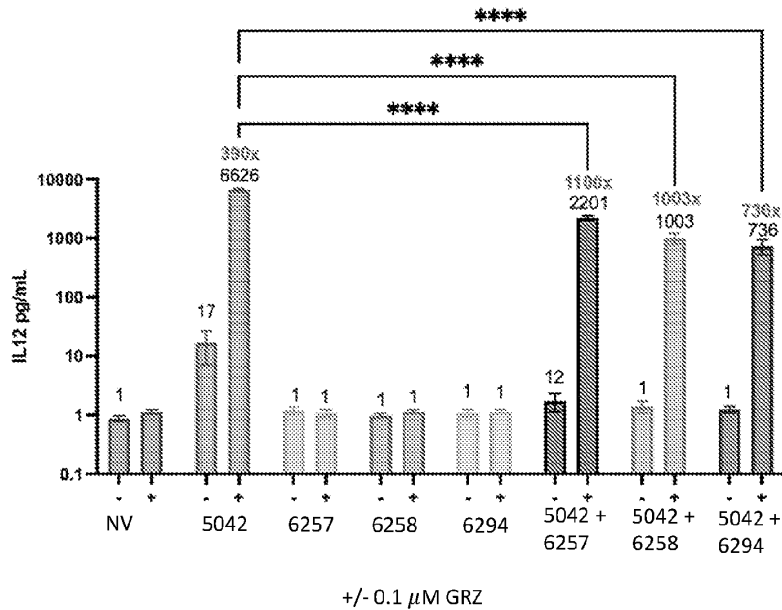


FIG. 42B

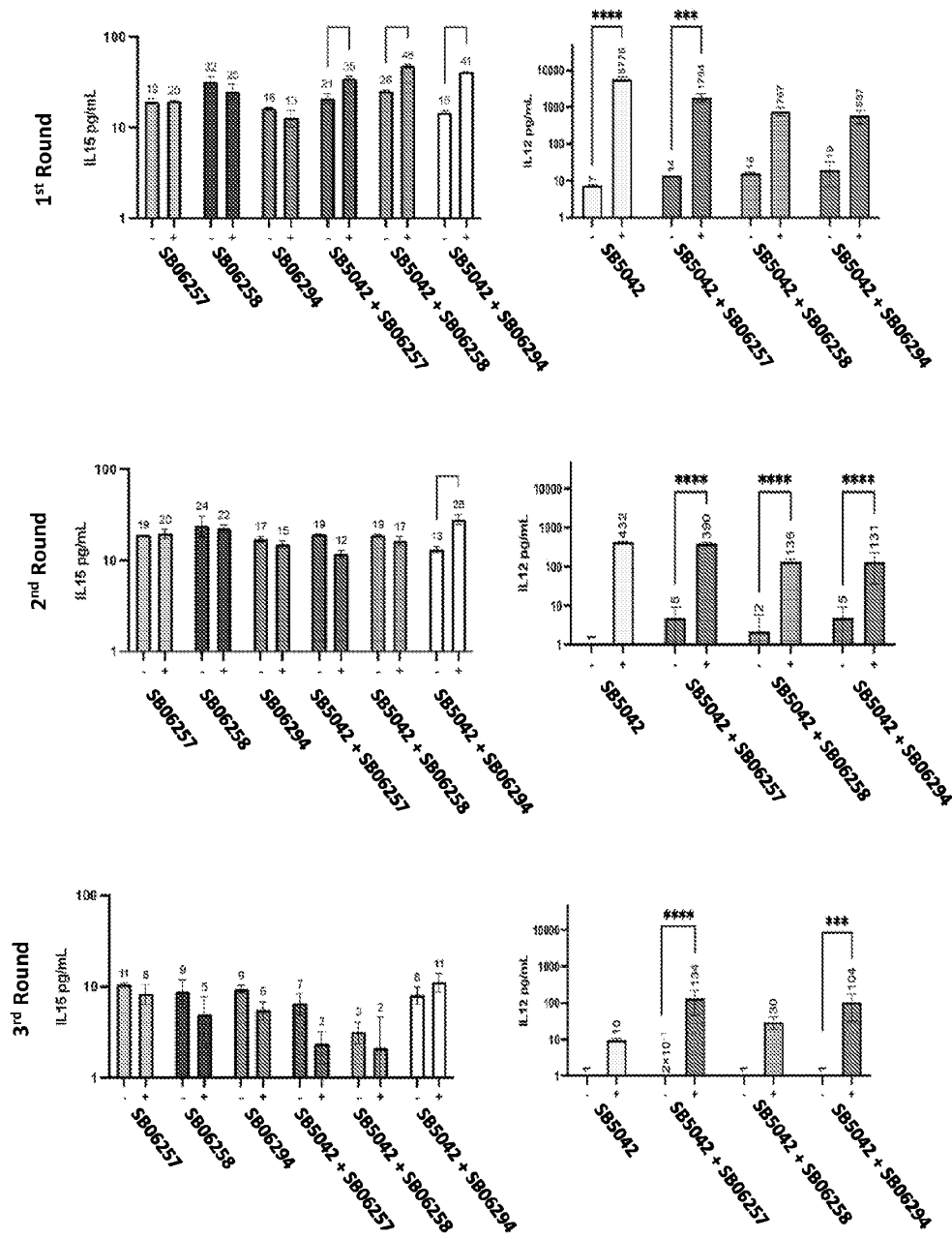


FIG. 43

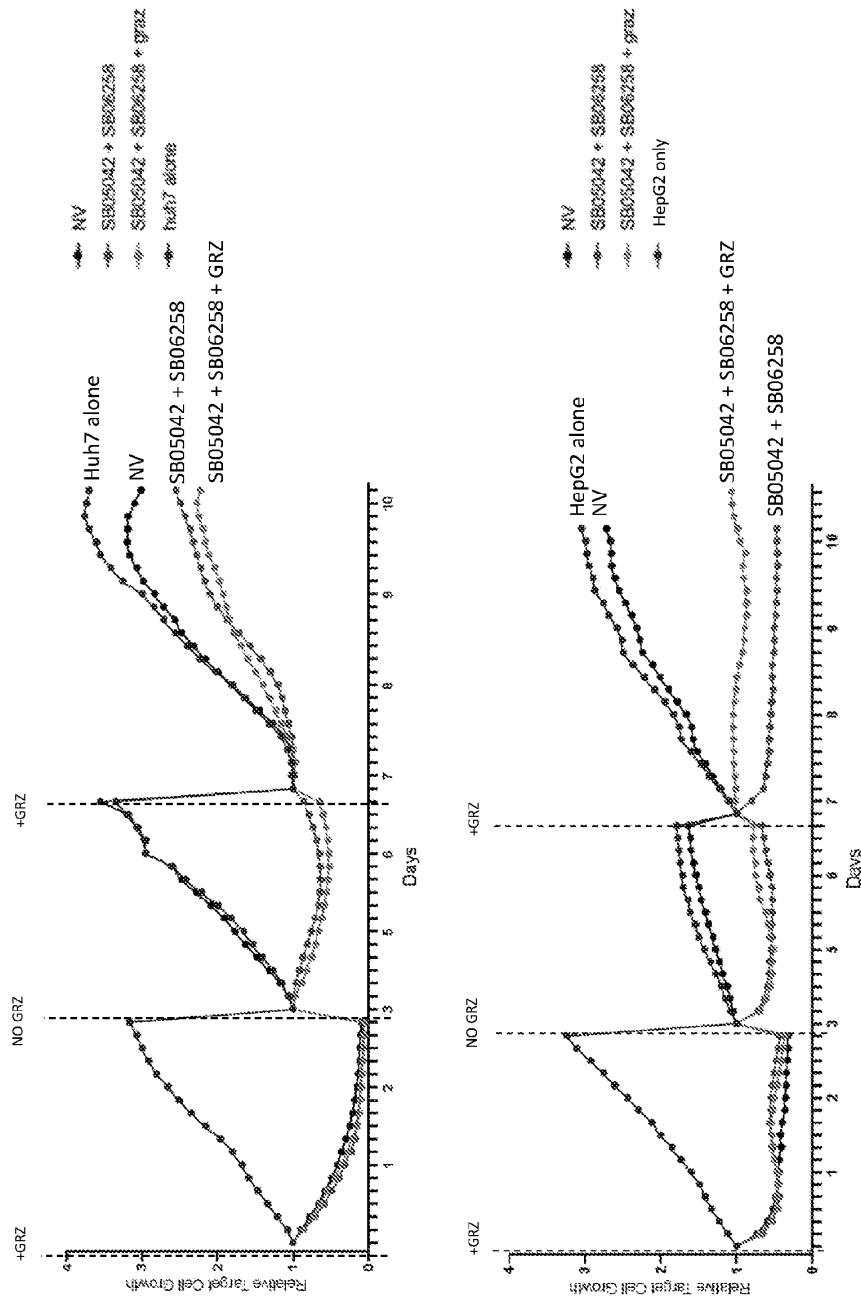


FIG. 44A

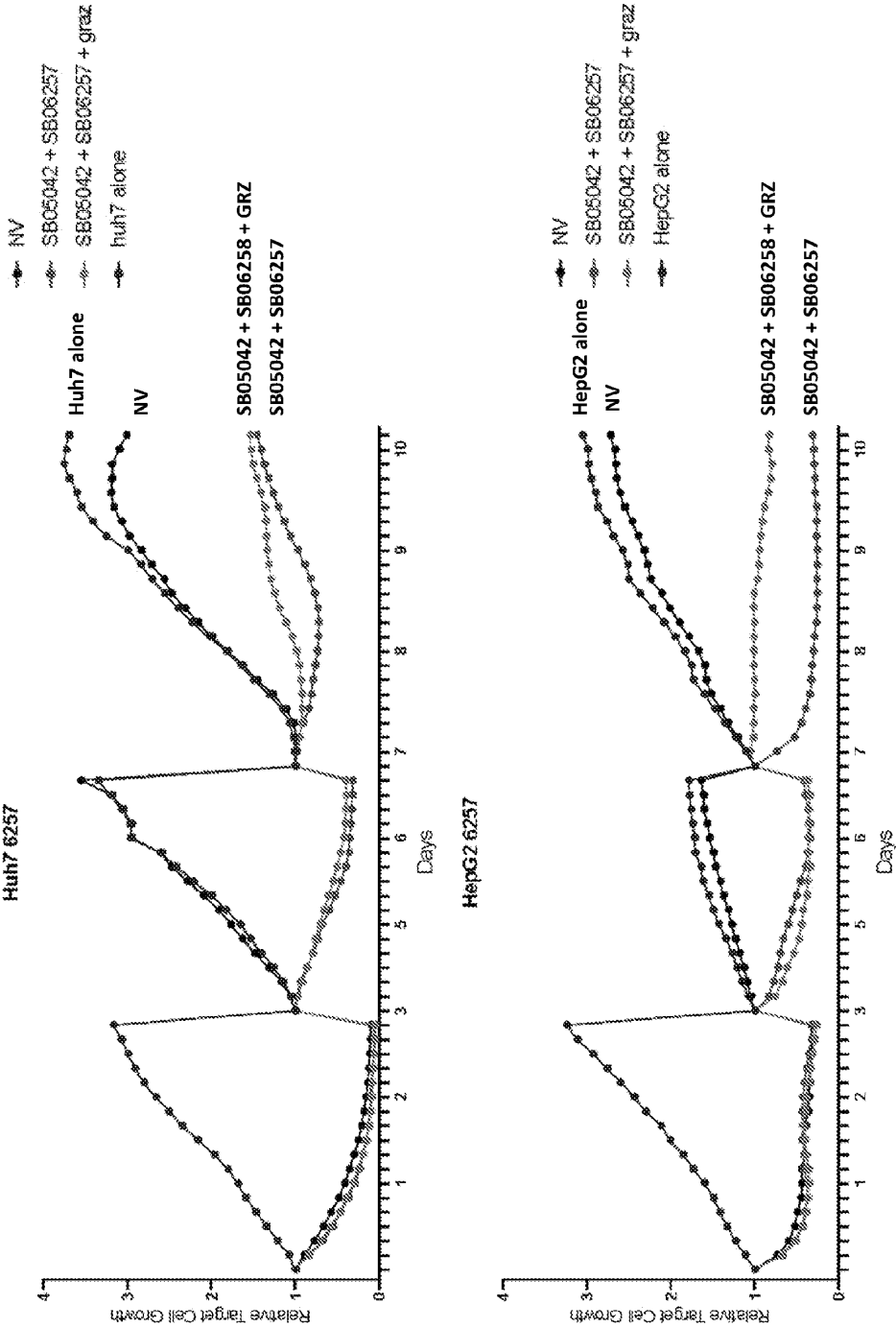


FIG. 44B

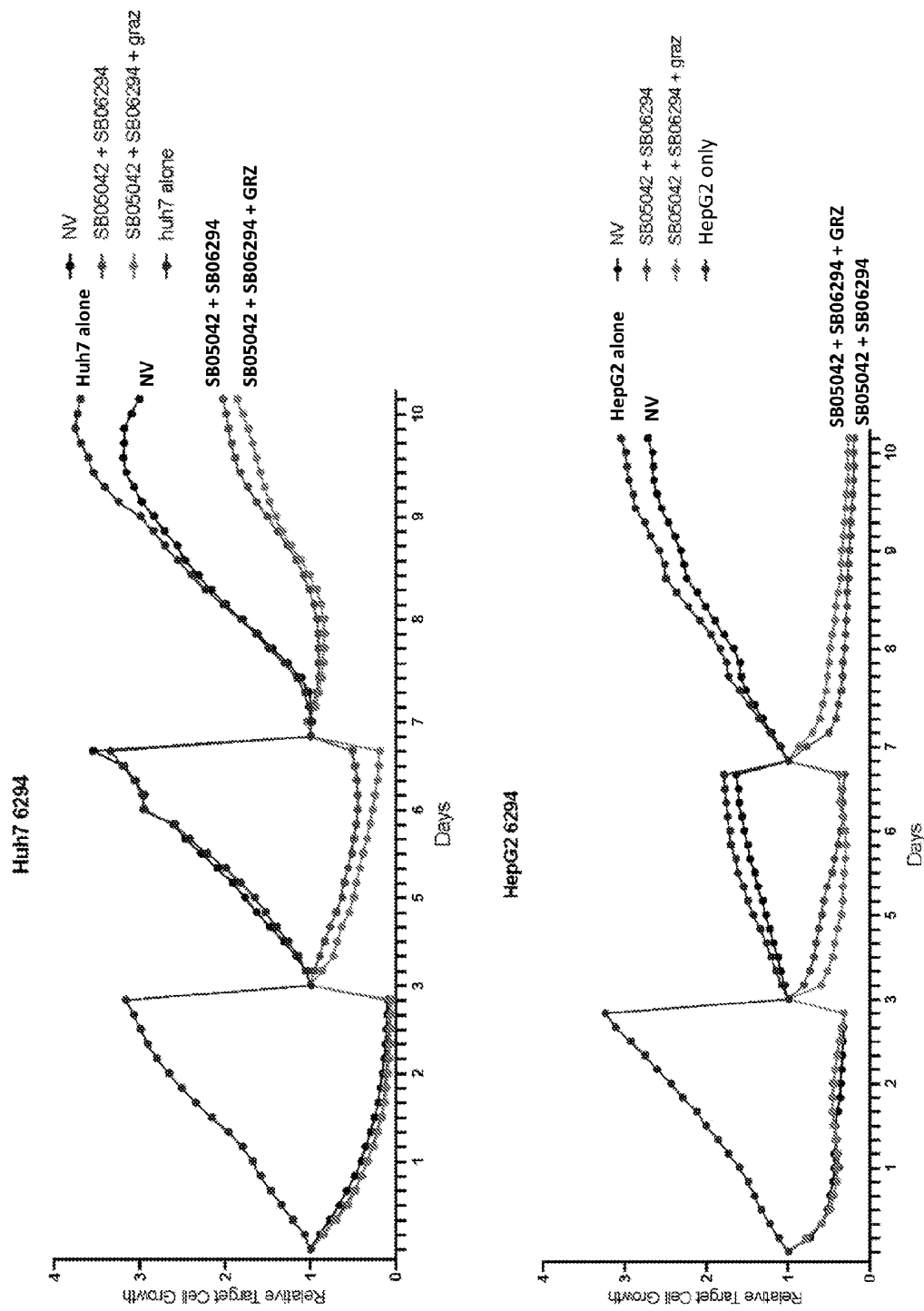


FIG. 44C

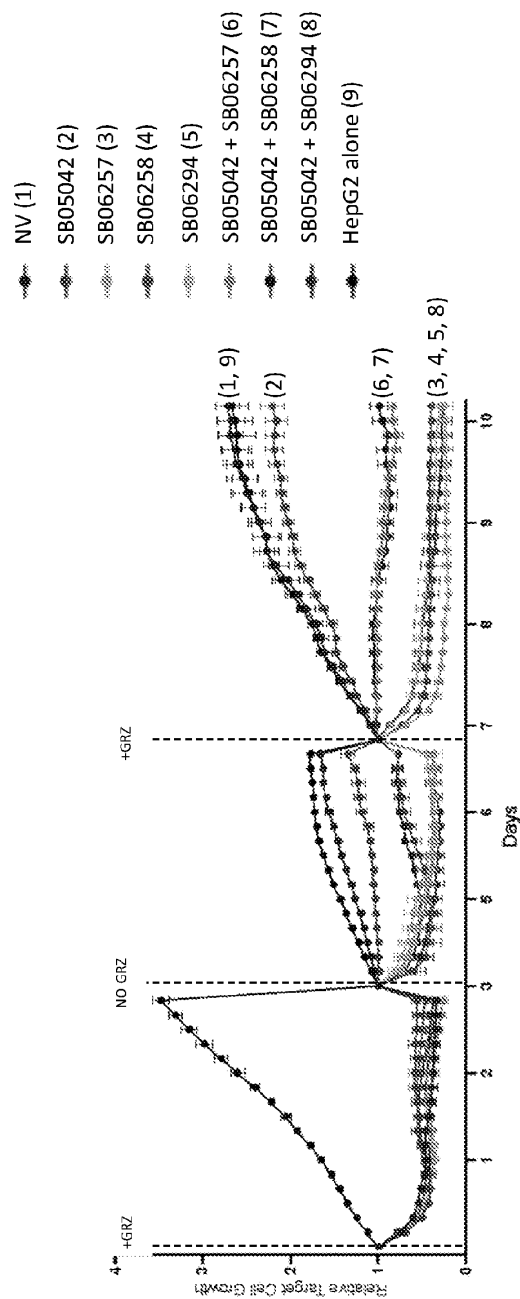


FIG. 44D

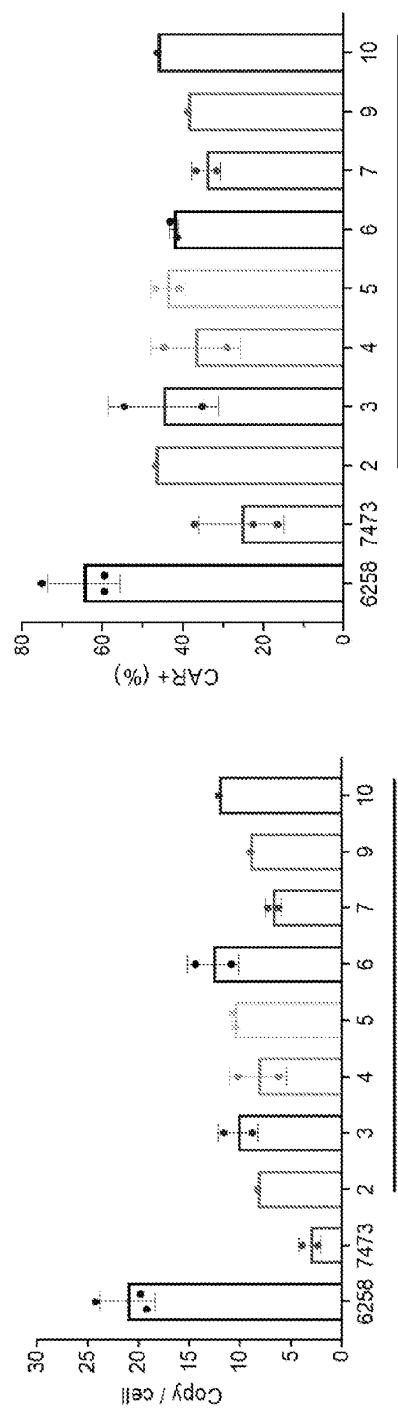


FIG. 45B

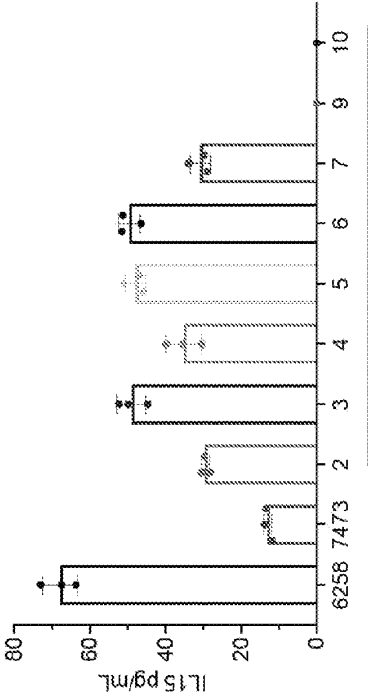


FIG. 45D

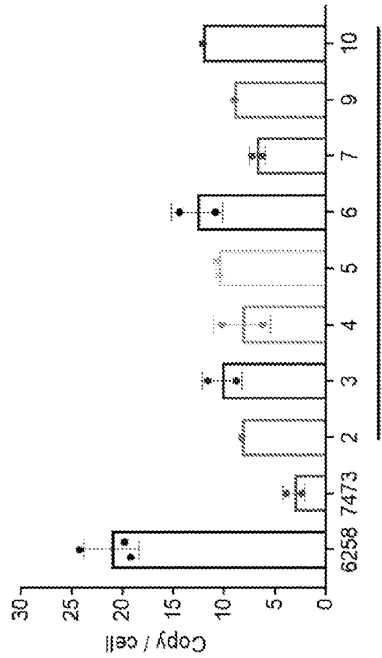


FIG. 45A

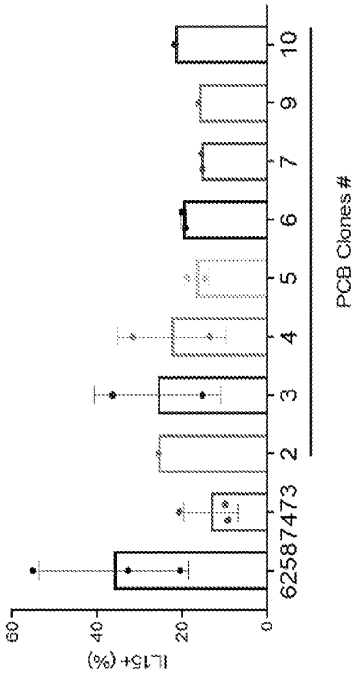


FIG. 45C

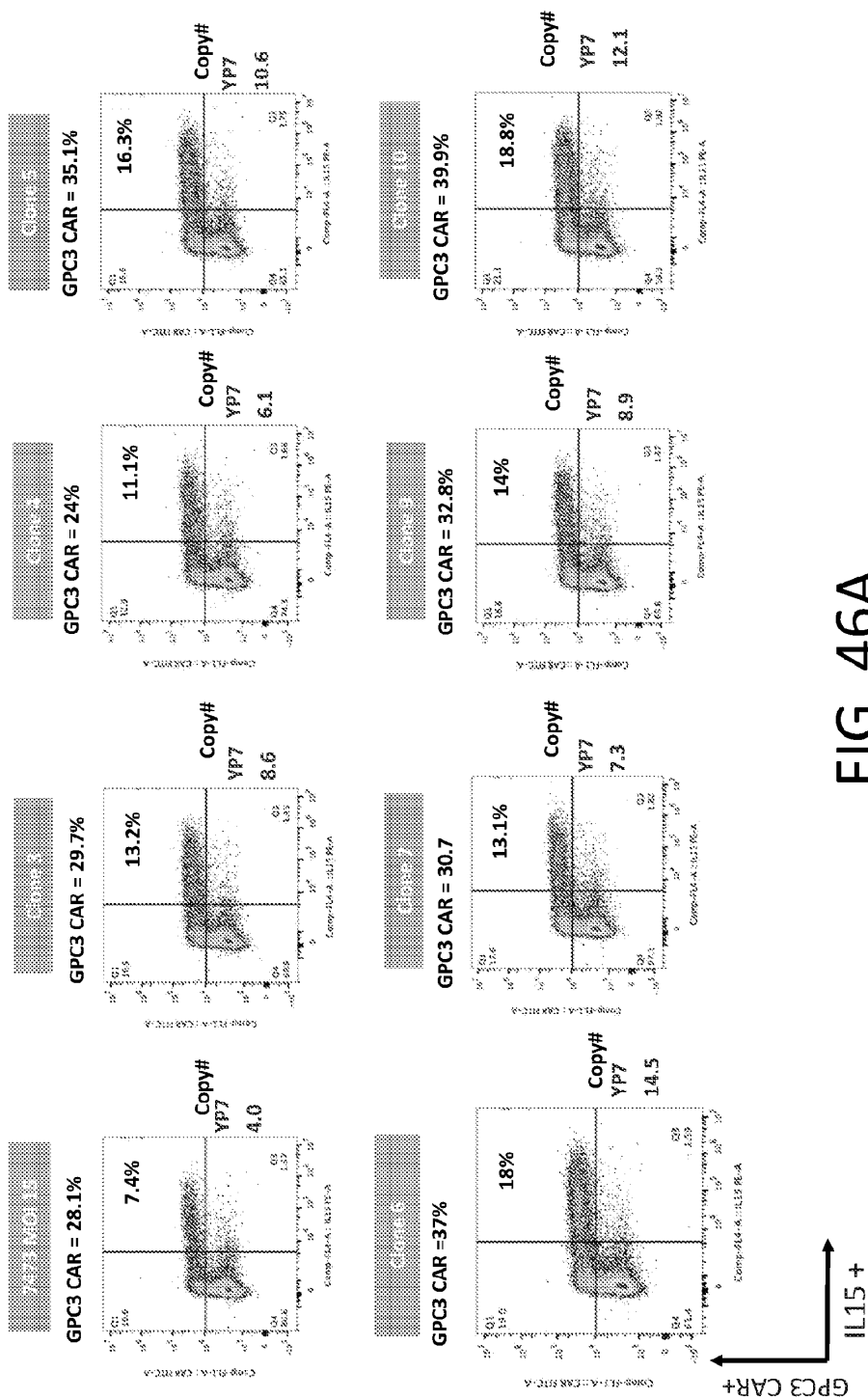


FIG. 46A

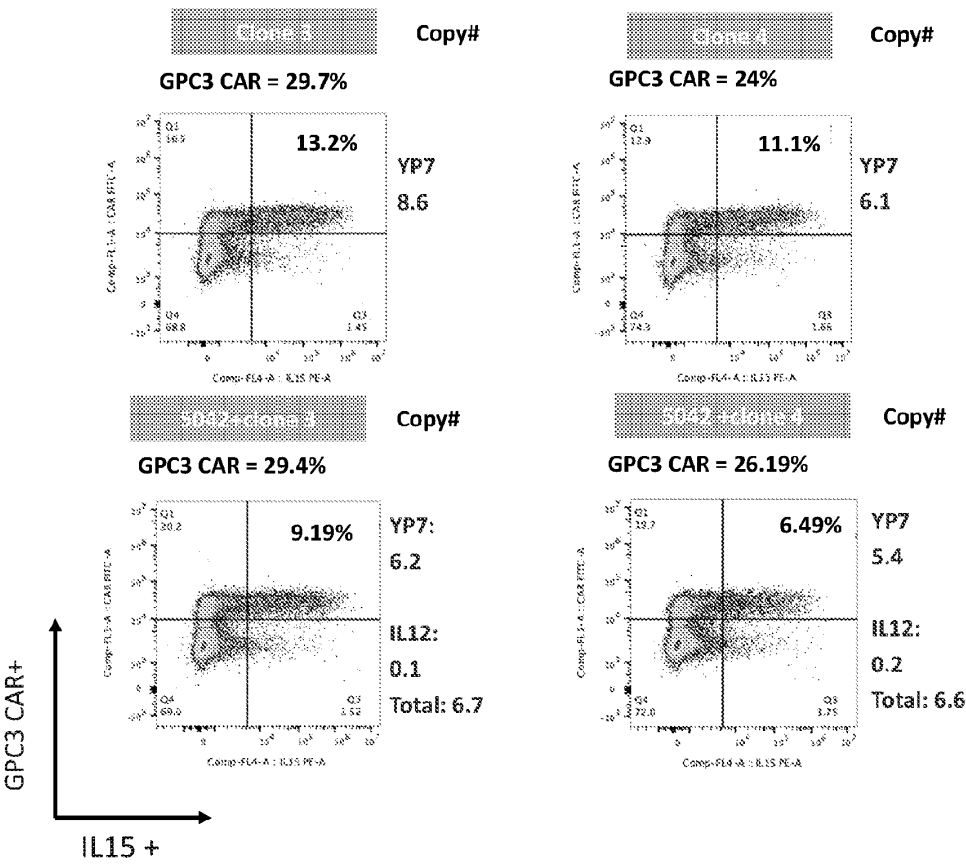


FIG. 46B