

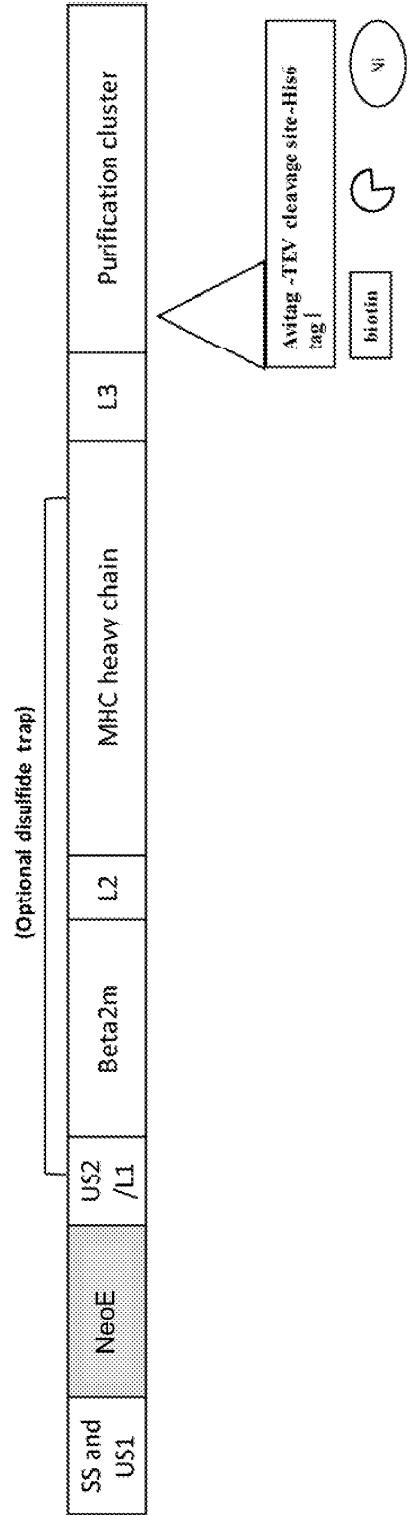
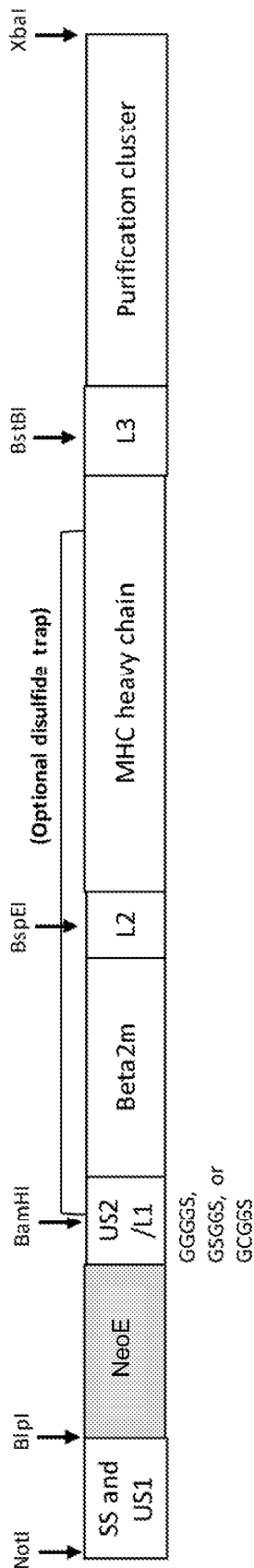


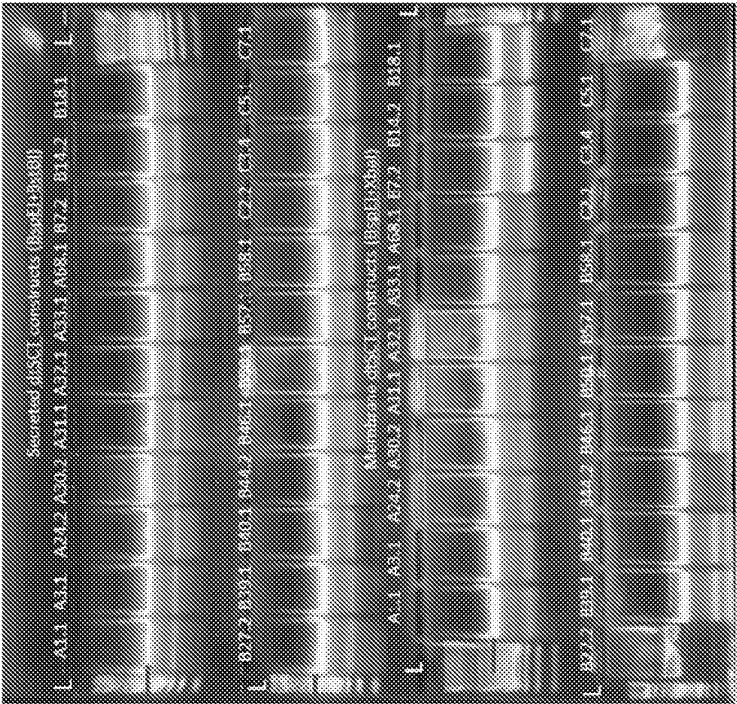
FIG. 1



Rapid cloning of off-the-shelf MHC compACT allele templates by PCR and insertion

- HLA-A*01:01 HLA-B*07:02 HLA-C*02:02
- HLA-A*02:01 HLA-B*14:02 HLA-C*03:04
- HLA-A*03:01 HLA-B*18:01 HLA-C*05:01
- HLA-A*24:02 HLA-B*27:02 HLA-C*07:01
- HLA-A*30:02 HLA-B*39:01
- HLA-A*31:01 HLA-B*40:01
- HLA-A*32:01 HLA-B*44:02
- HLA-A*33:01 HLA-B*46:01
- HLA-A*68:01 HLA-B*50:01
- HLA-B*57:01
- HLA-B*58:01

FIG. 2



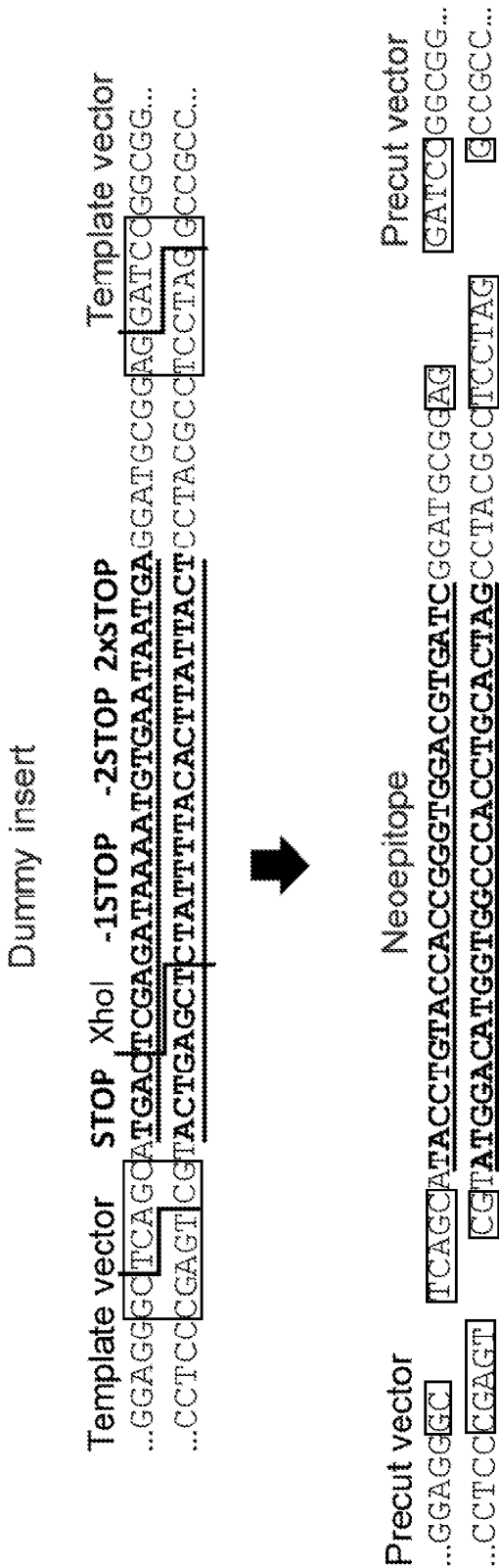


FIG. 3

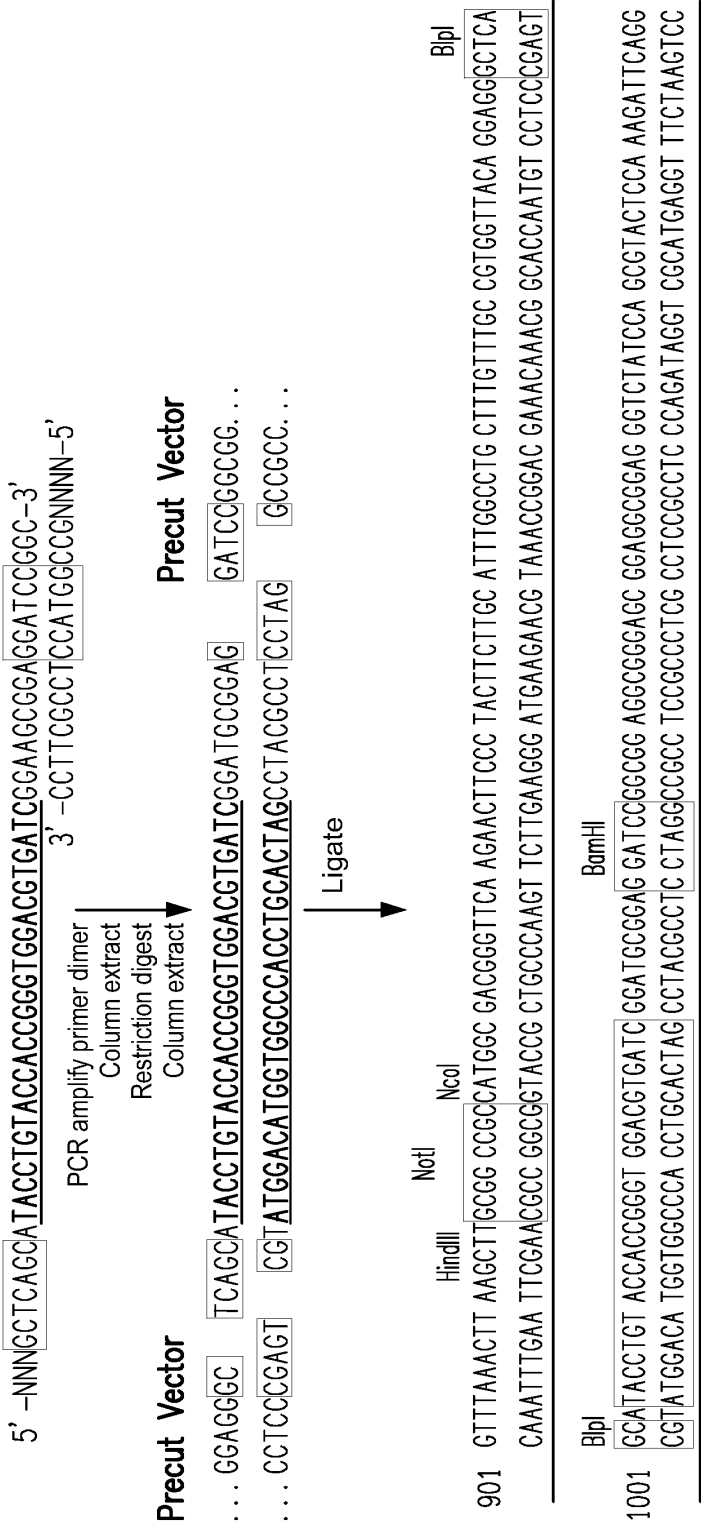
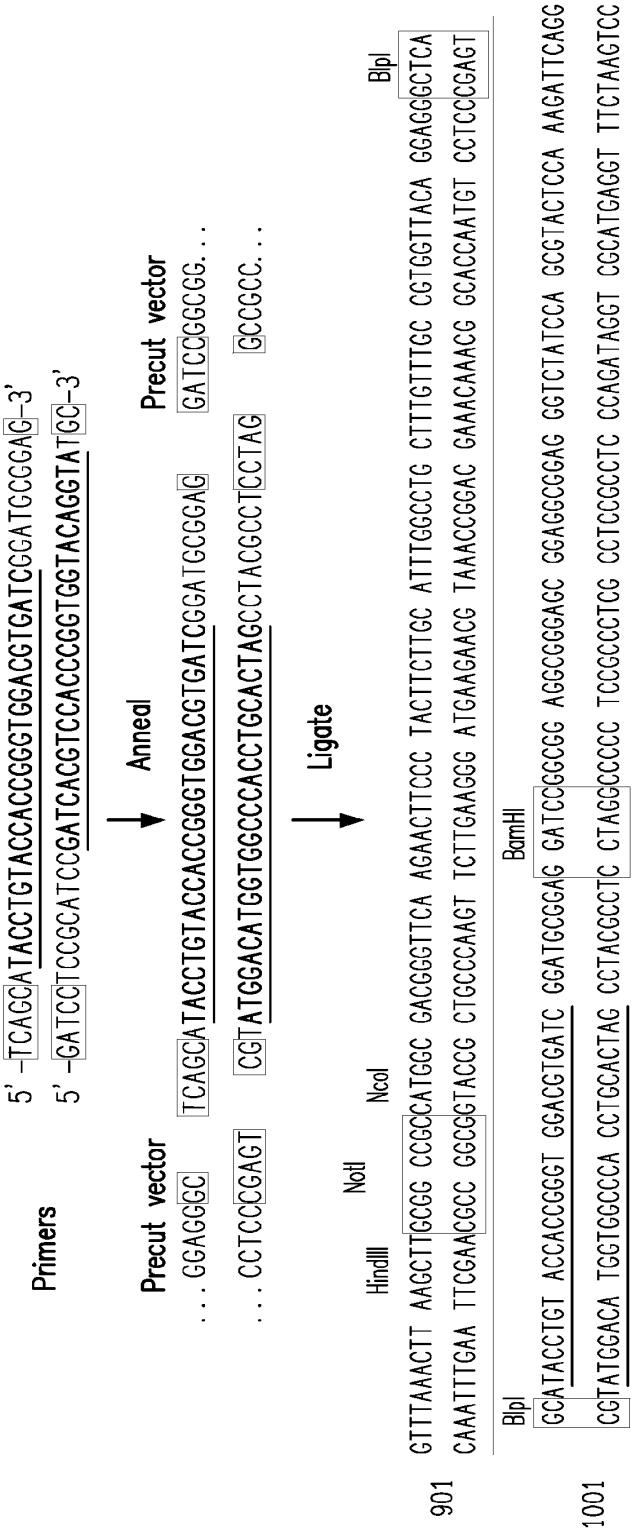


FIG. 4



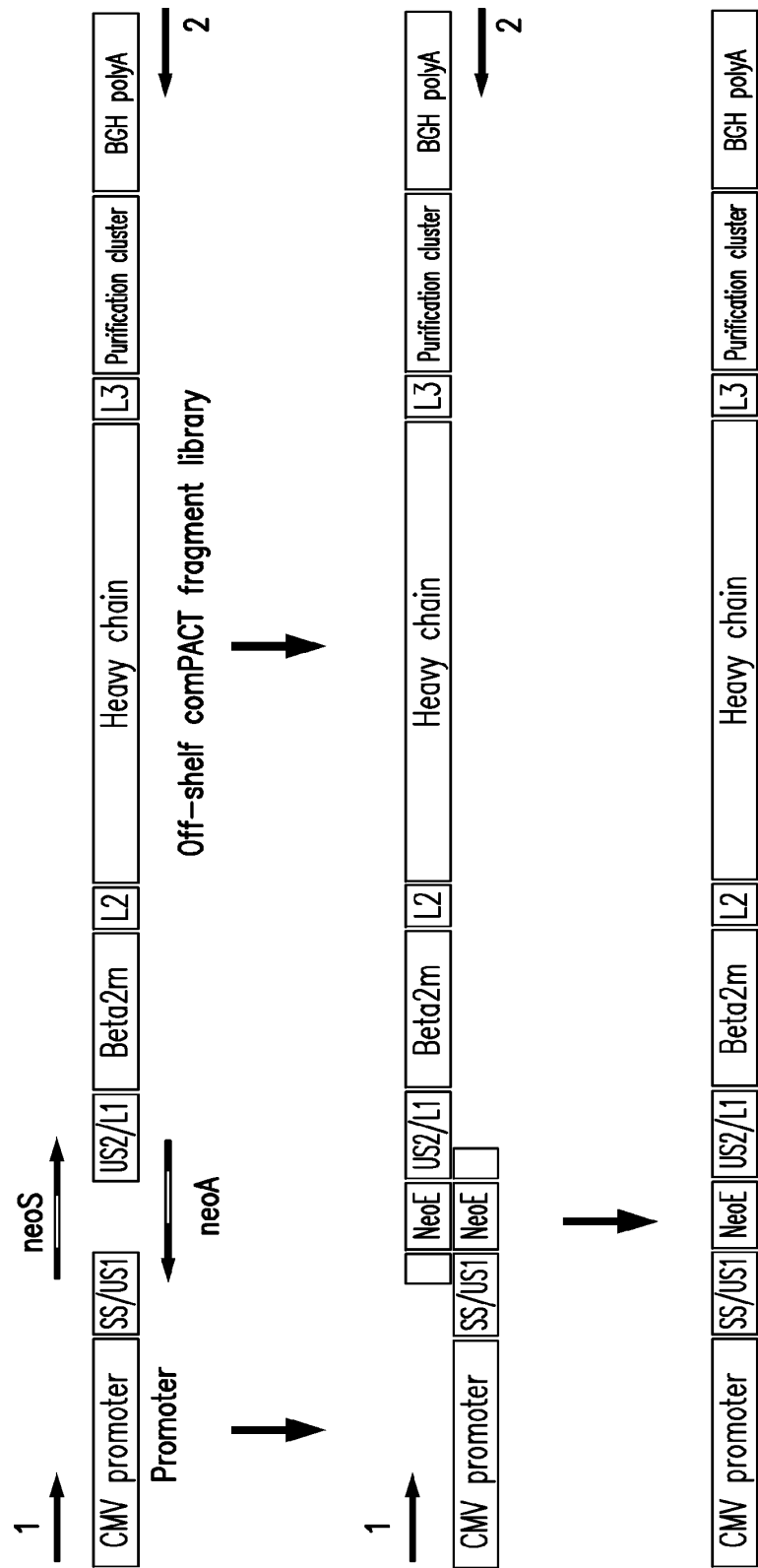


FIG. 6

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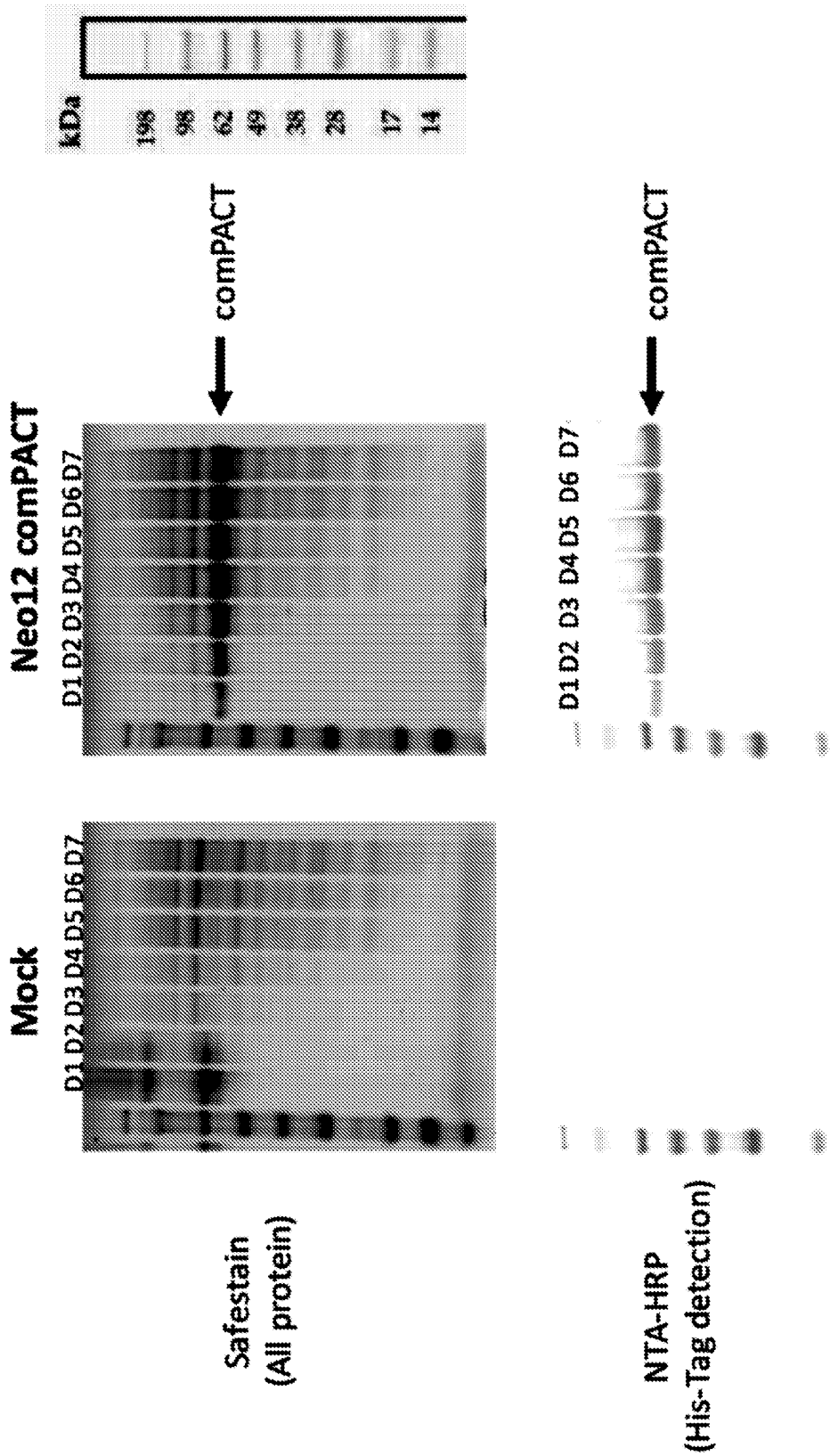


FIG. 7

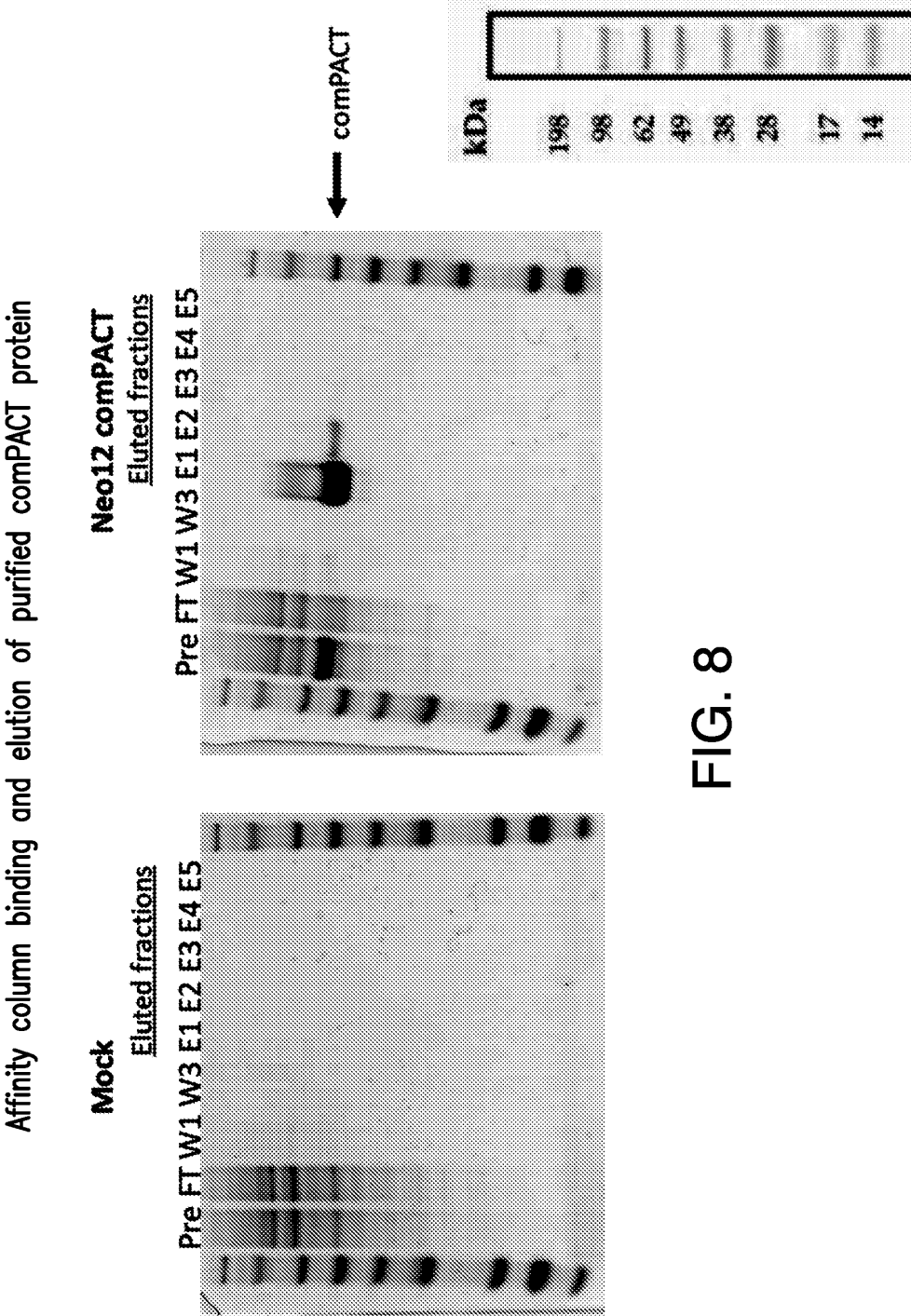


FIG. 8

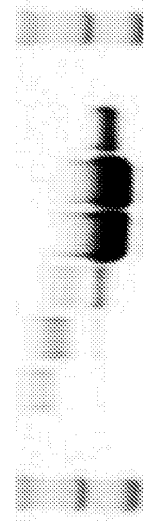
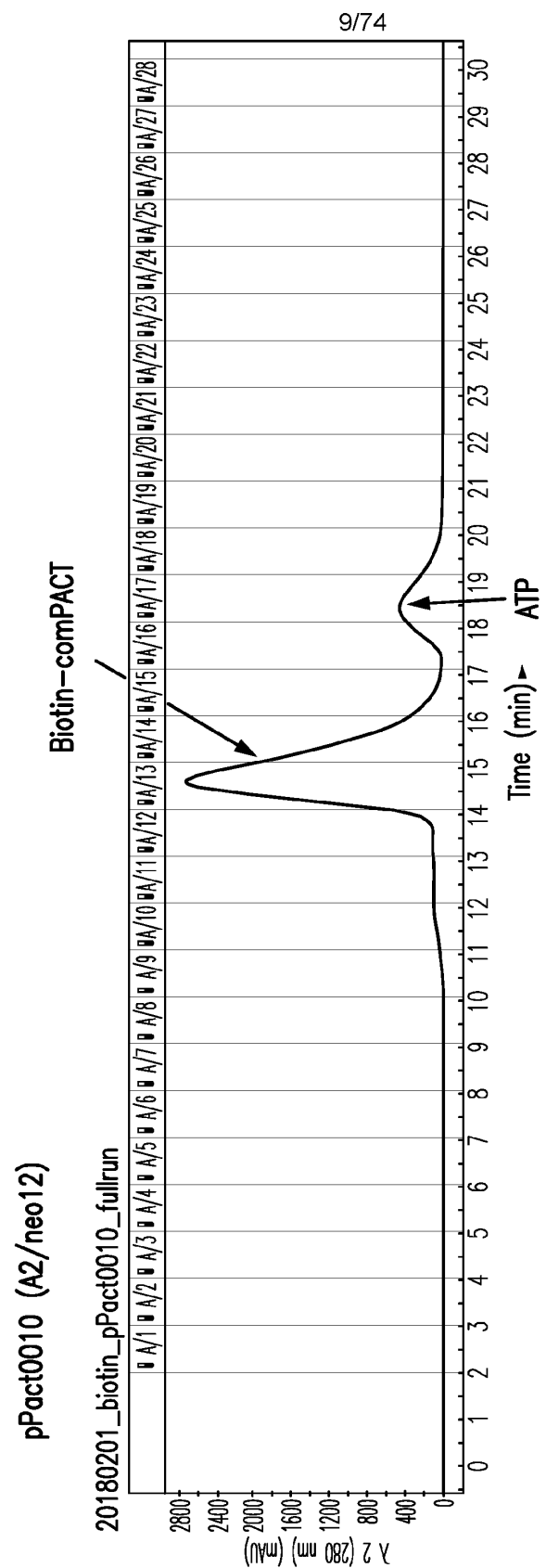


FIG. 9

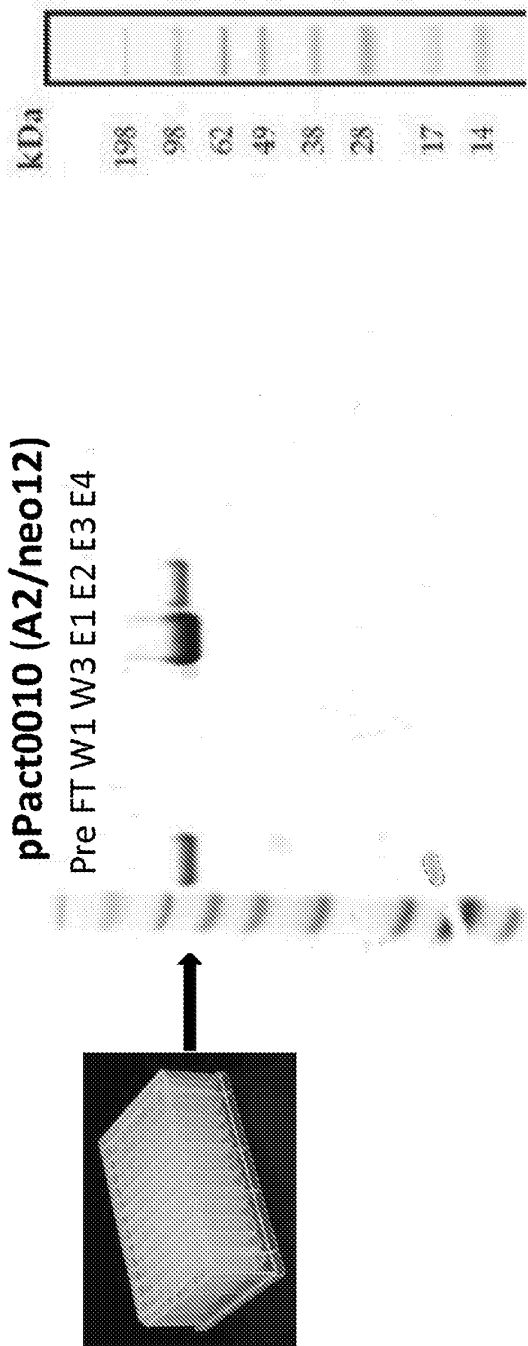


FIG. 10

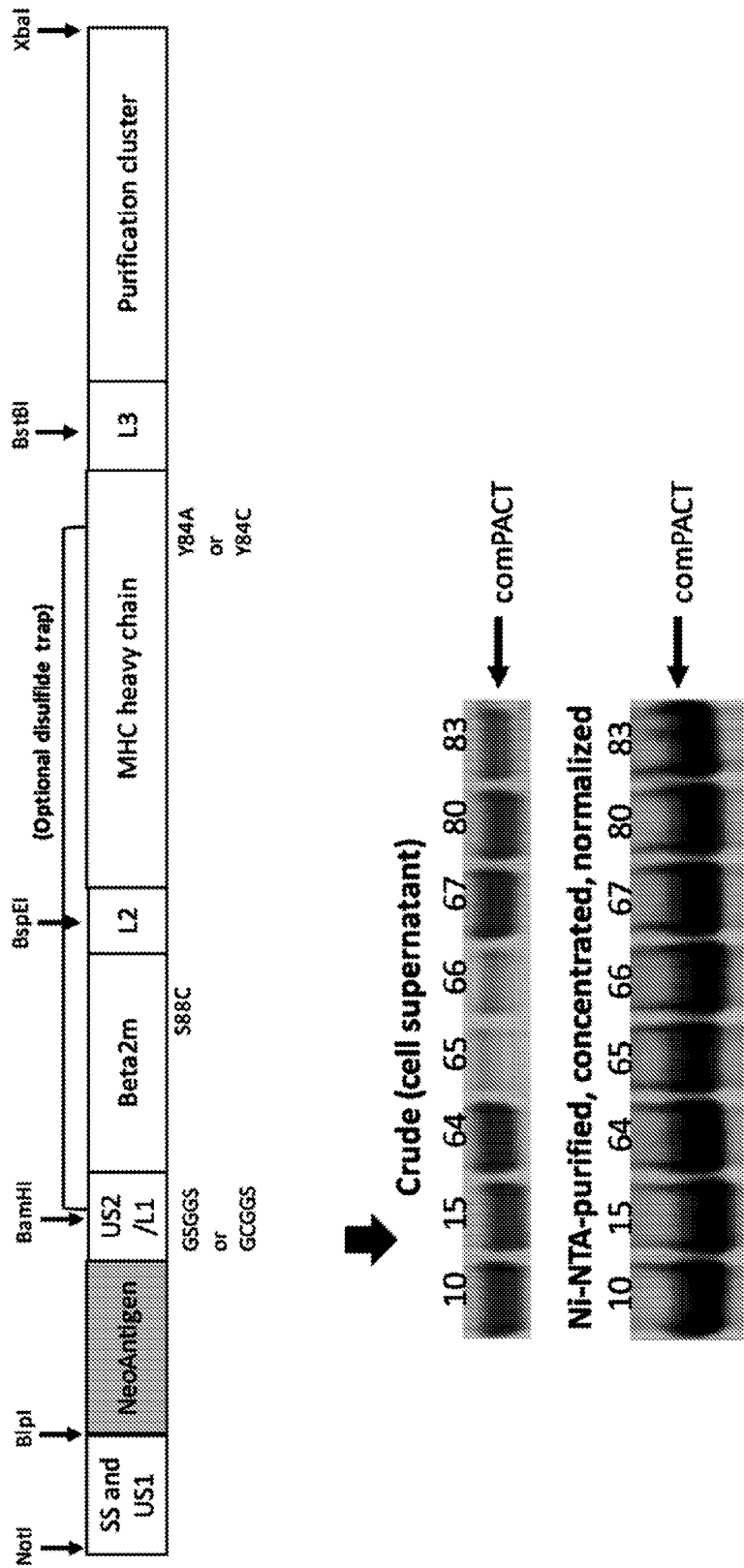


FIG. 11

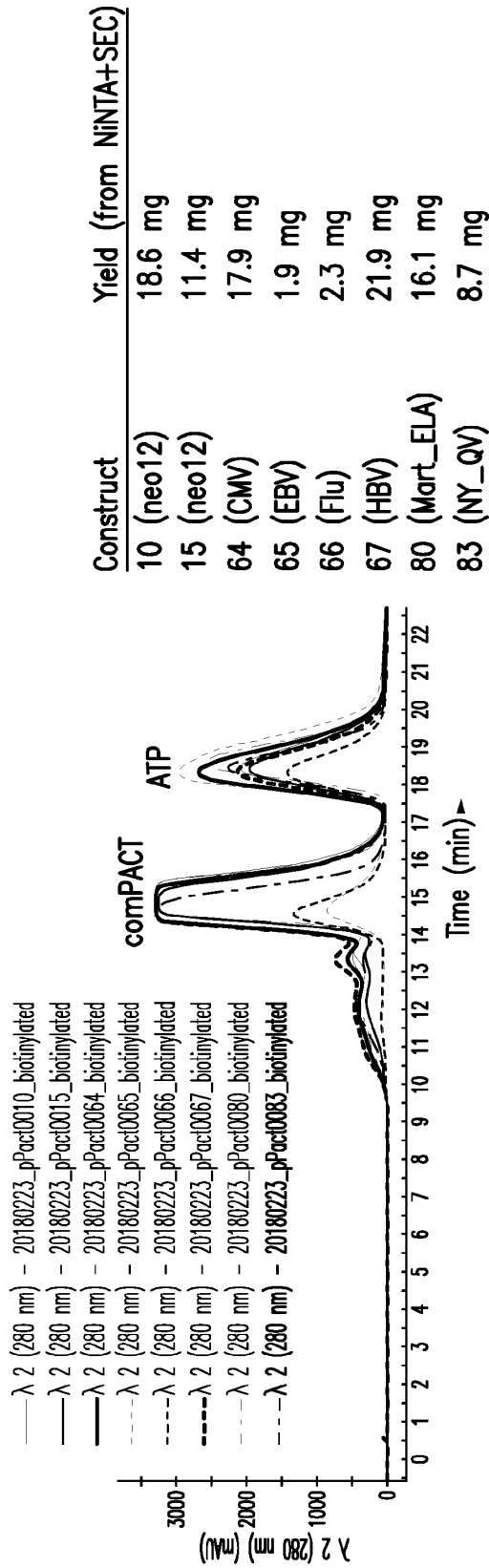


FIG. 12

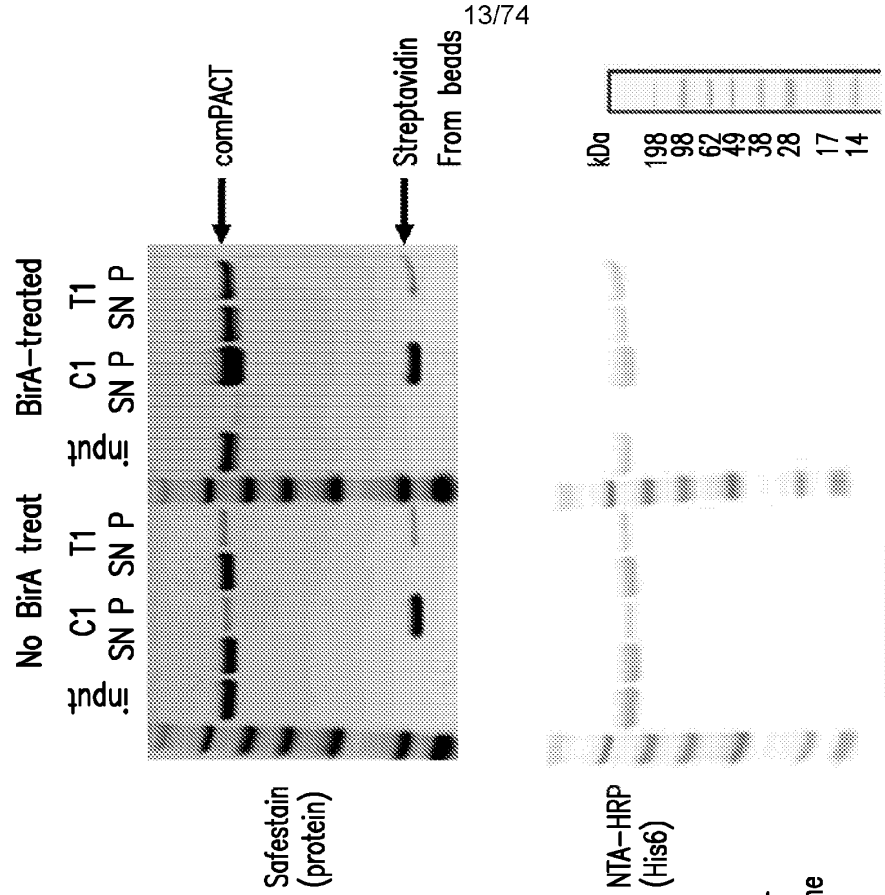


FIG. 14

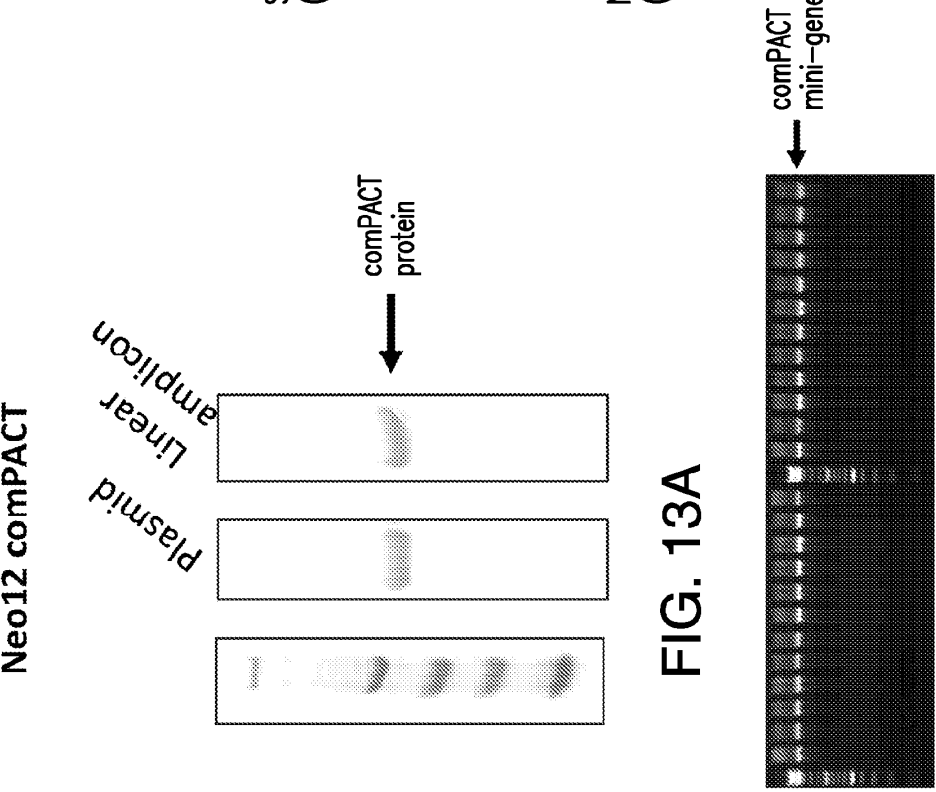


FIG. 13A

FIG. 13B

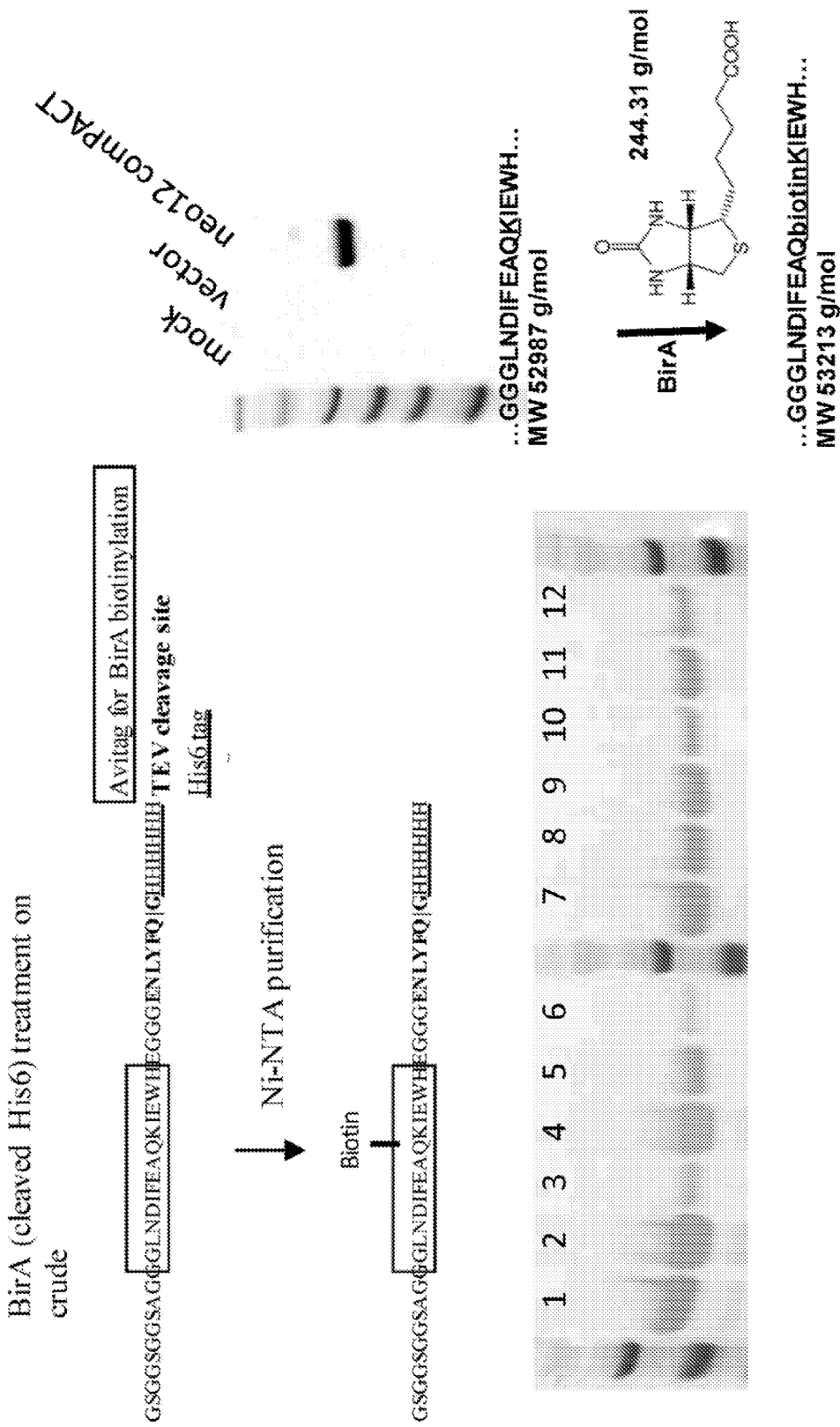


FIG. 15

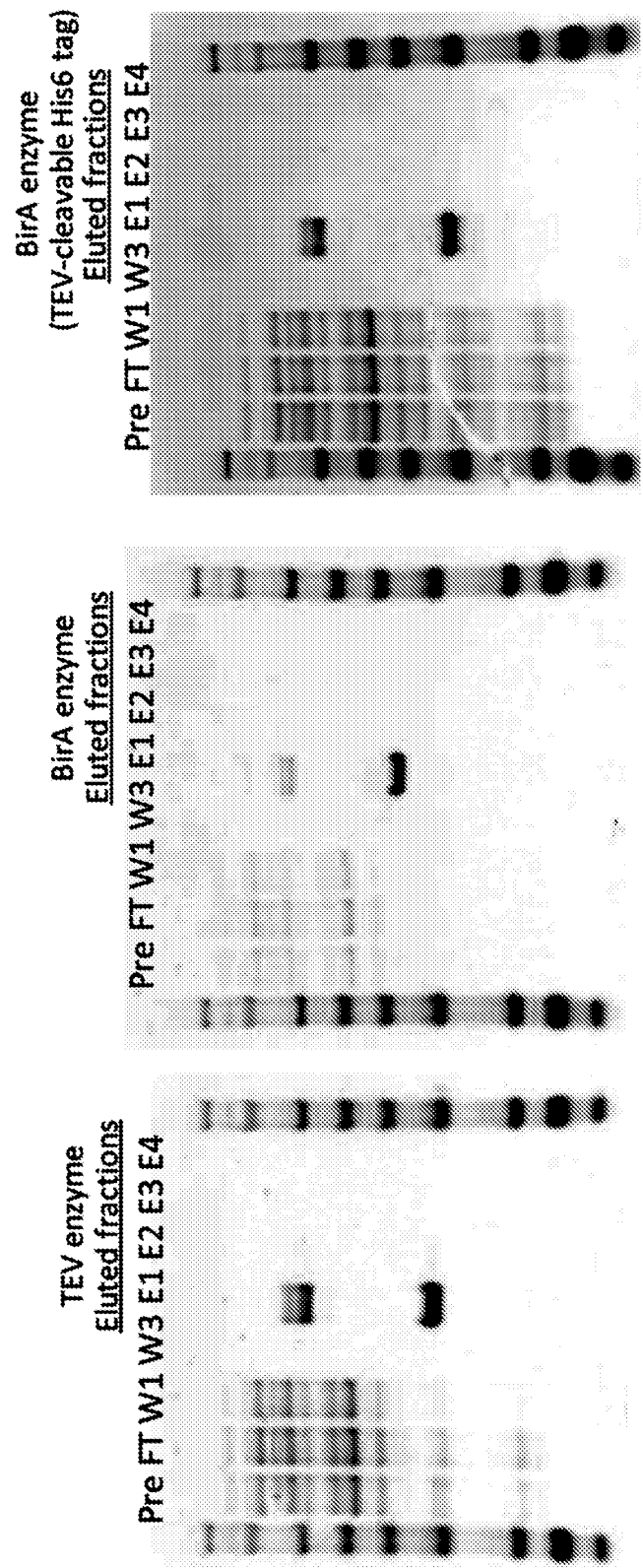
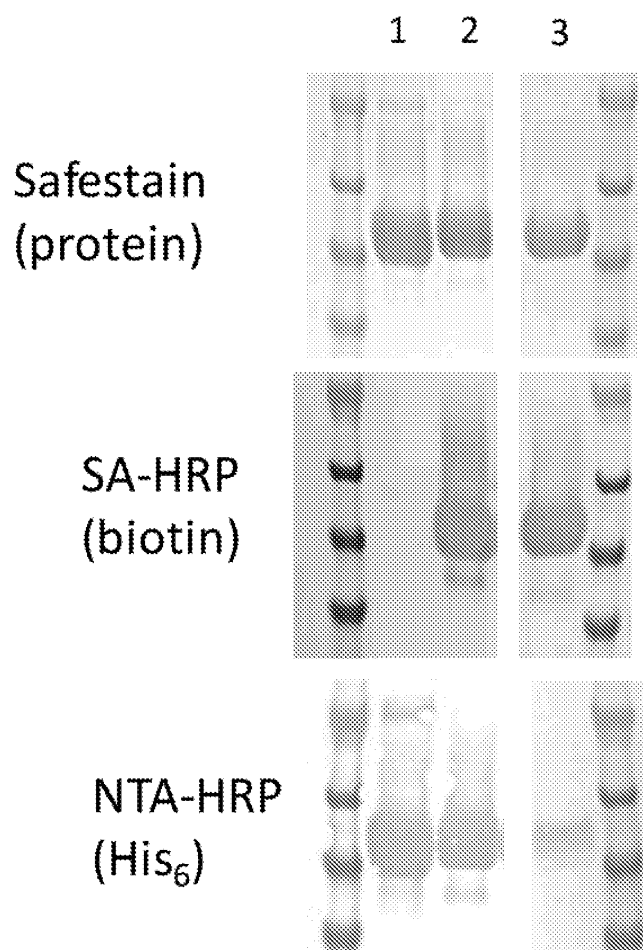


FIG. 16A

FIG. 16B

FIG. 16C

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1. Untreated comPACT
2. BirA treated comPACT (biotinylated)
3. BirA treated and then TEV treated comPACT (biotinylated, His₆ tag cleaved)

FIG. 17

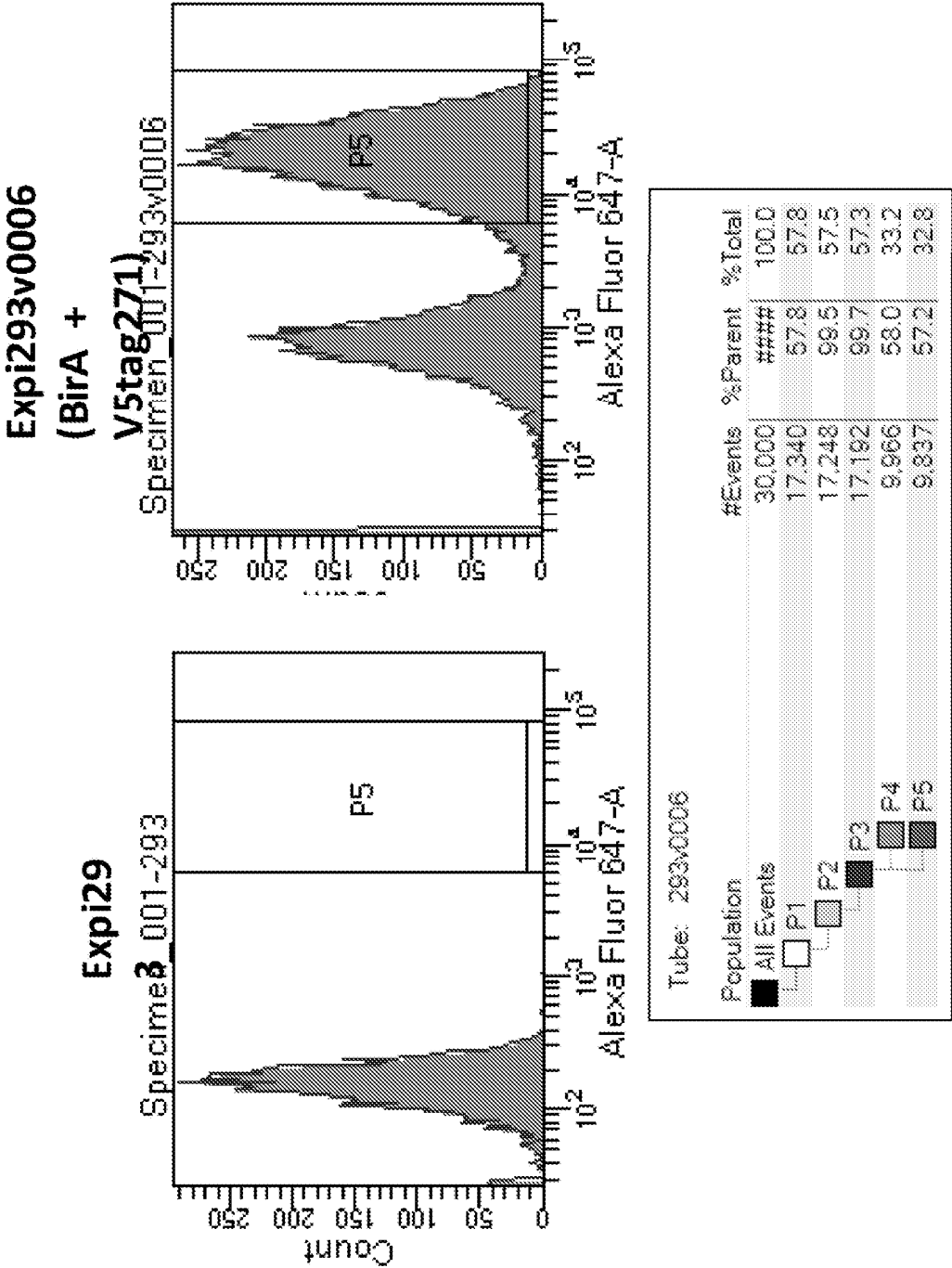


FIG. 18

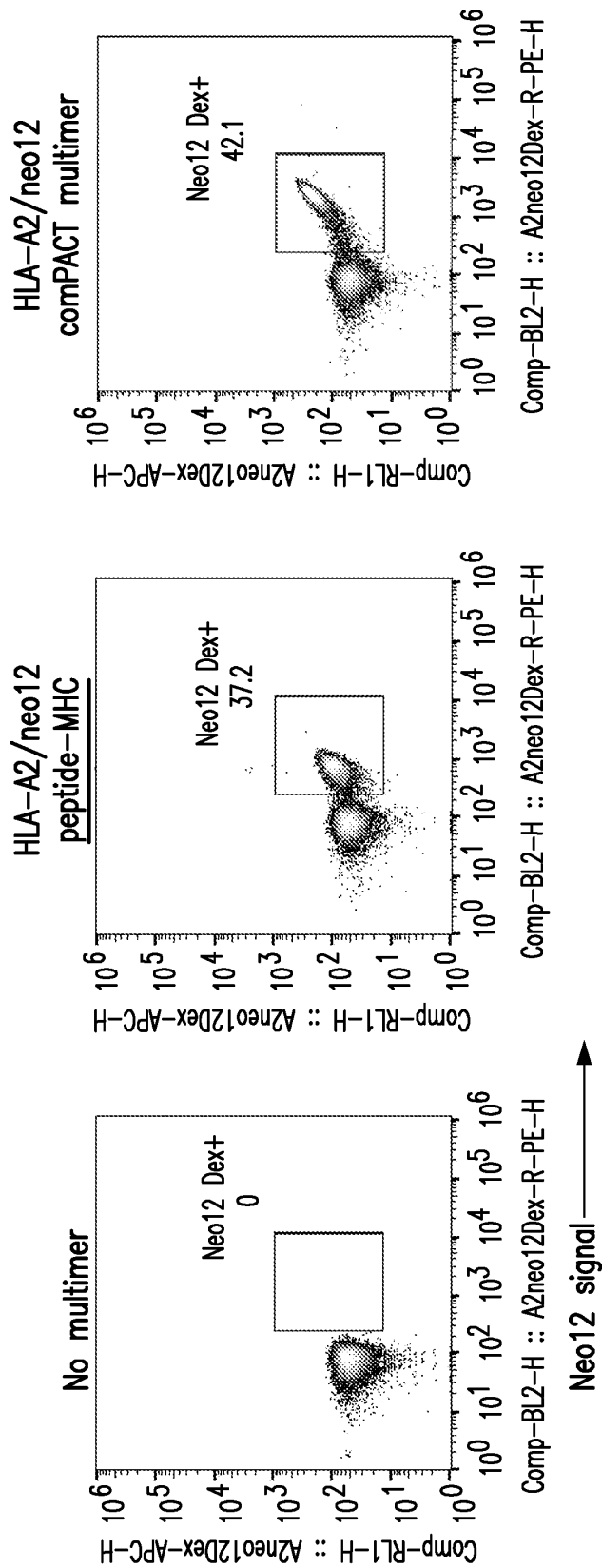


FIG. 19

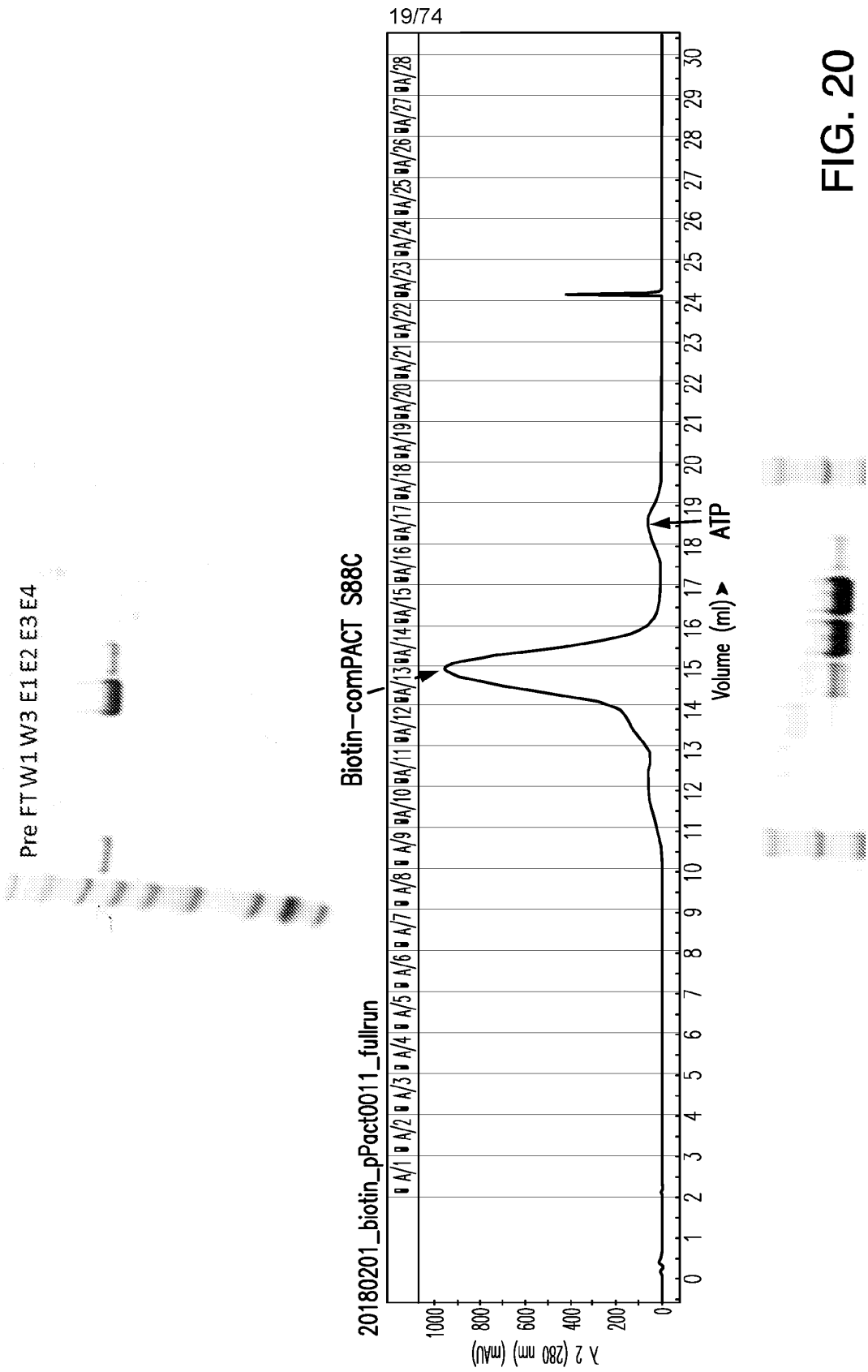


FIG. 20

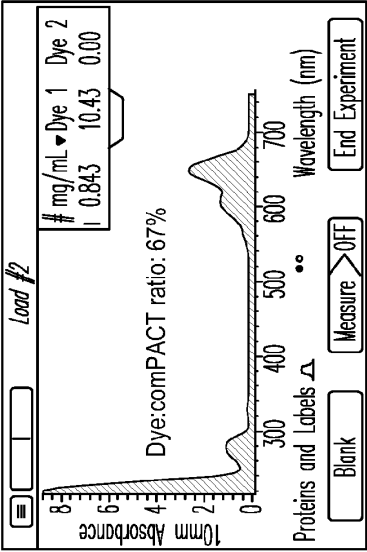
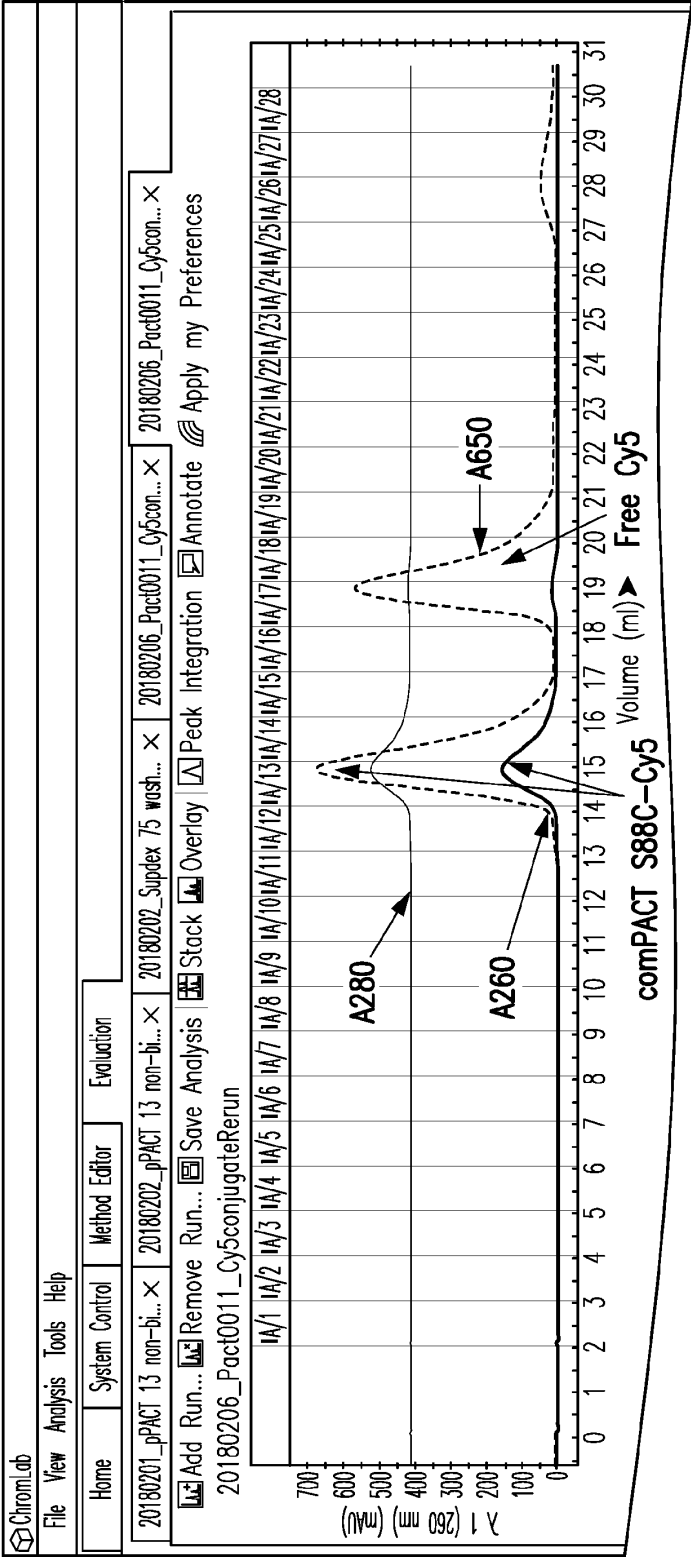
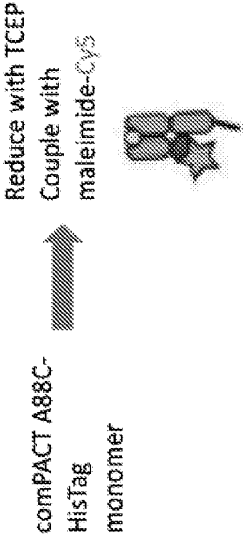


FIG. 21



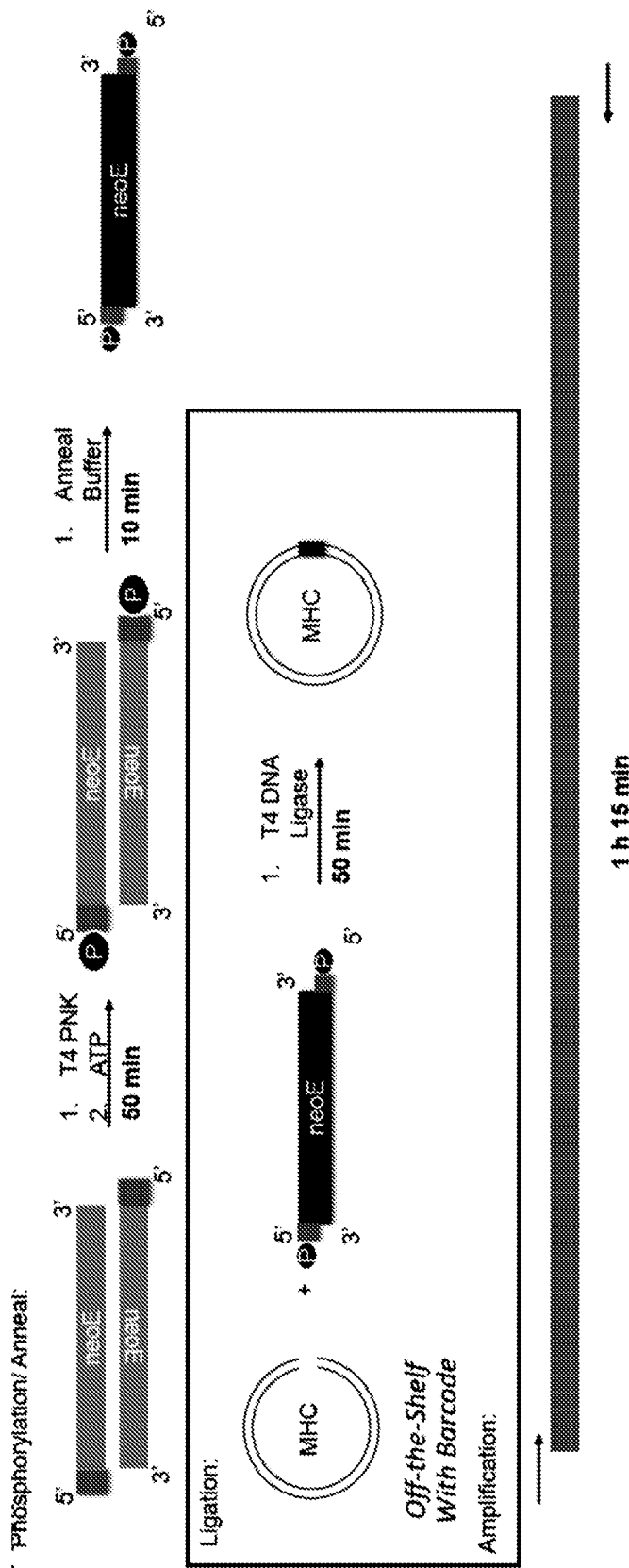


FIG. 22A

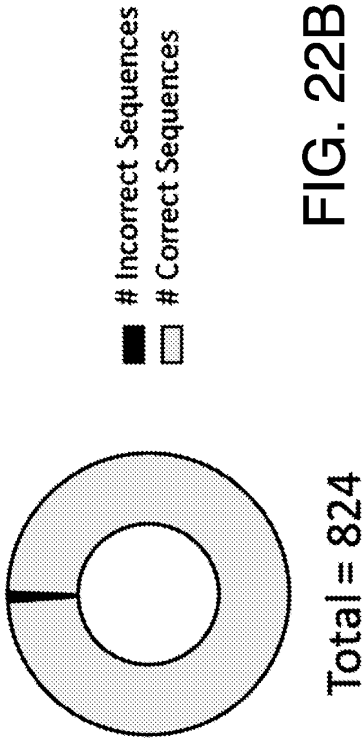


FIG. 22B

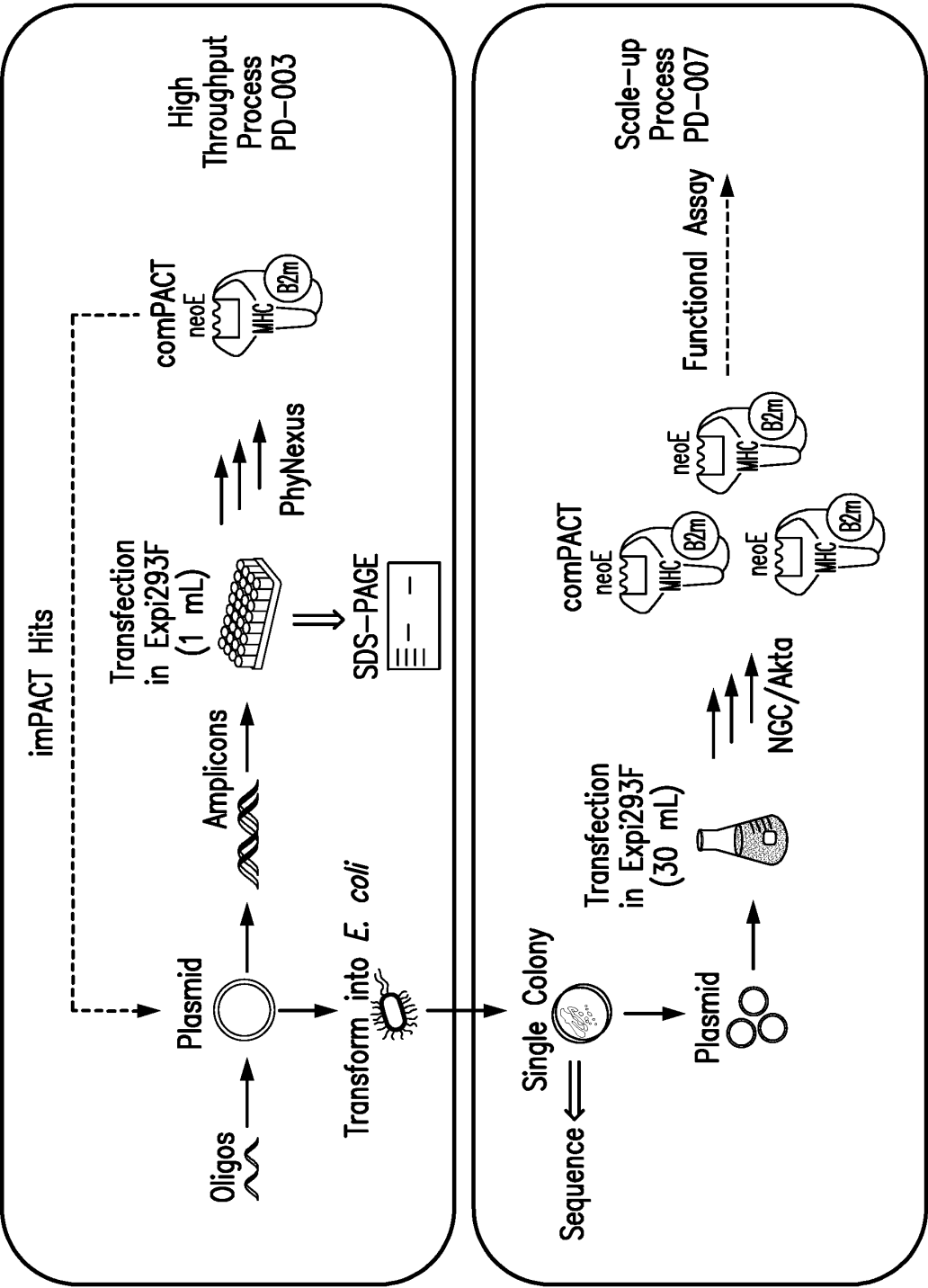


FIG. 23

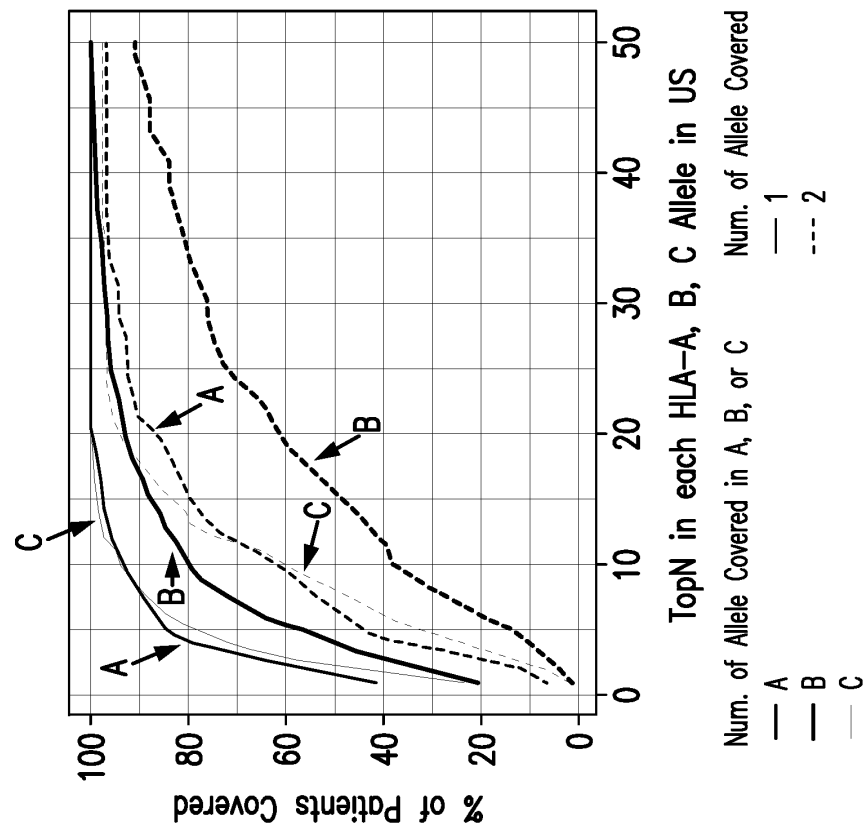


FIG. 24A

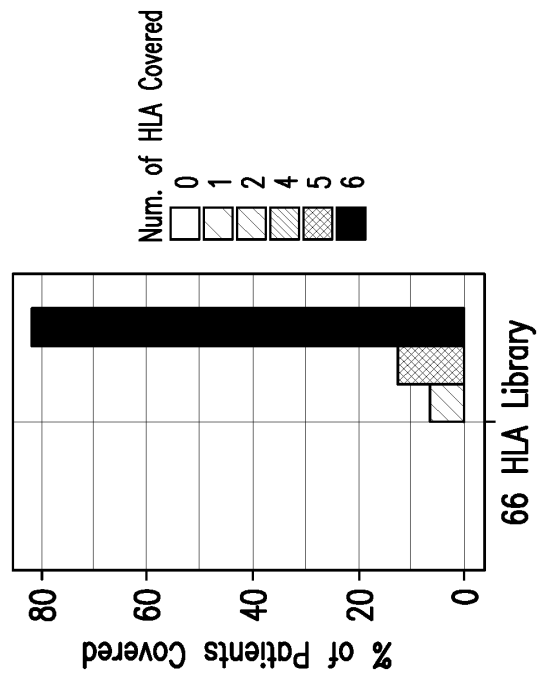


FIG. 24B

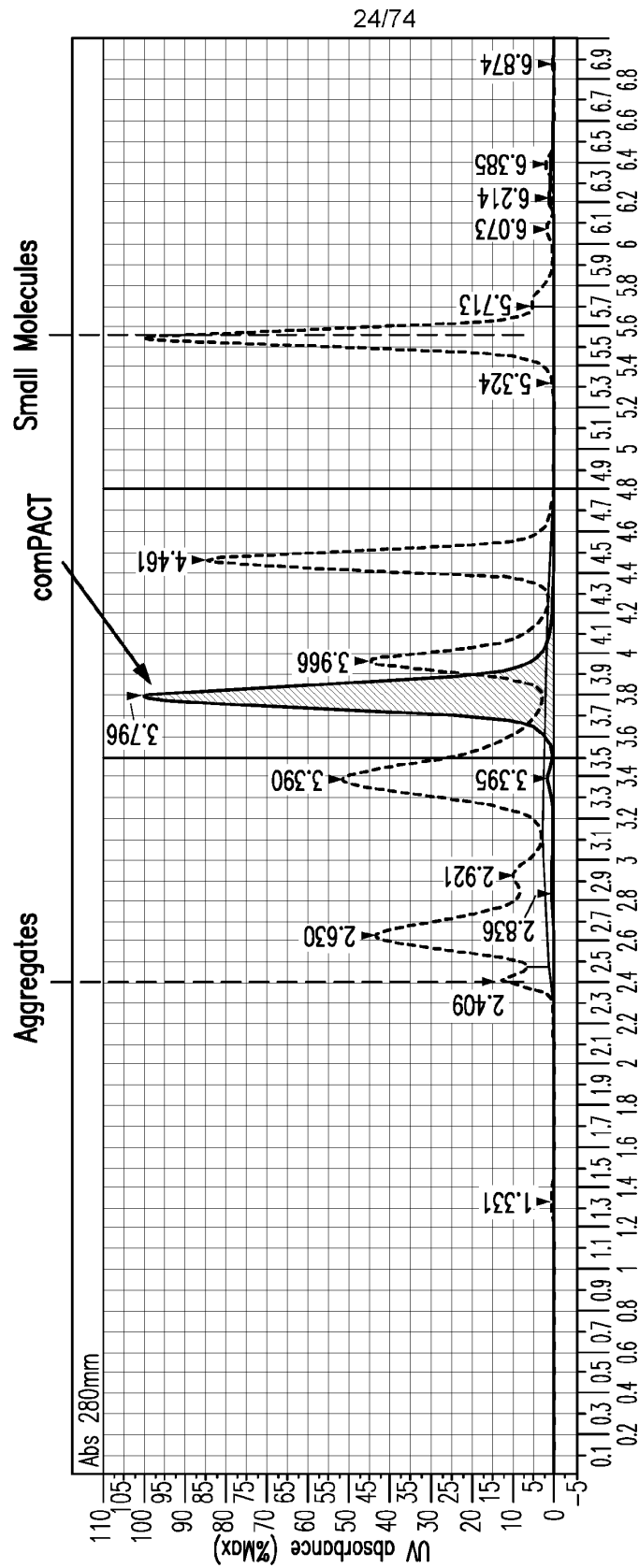


FIG. 25A

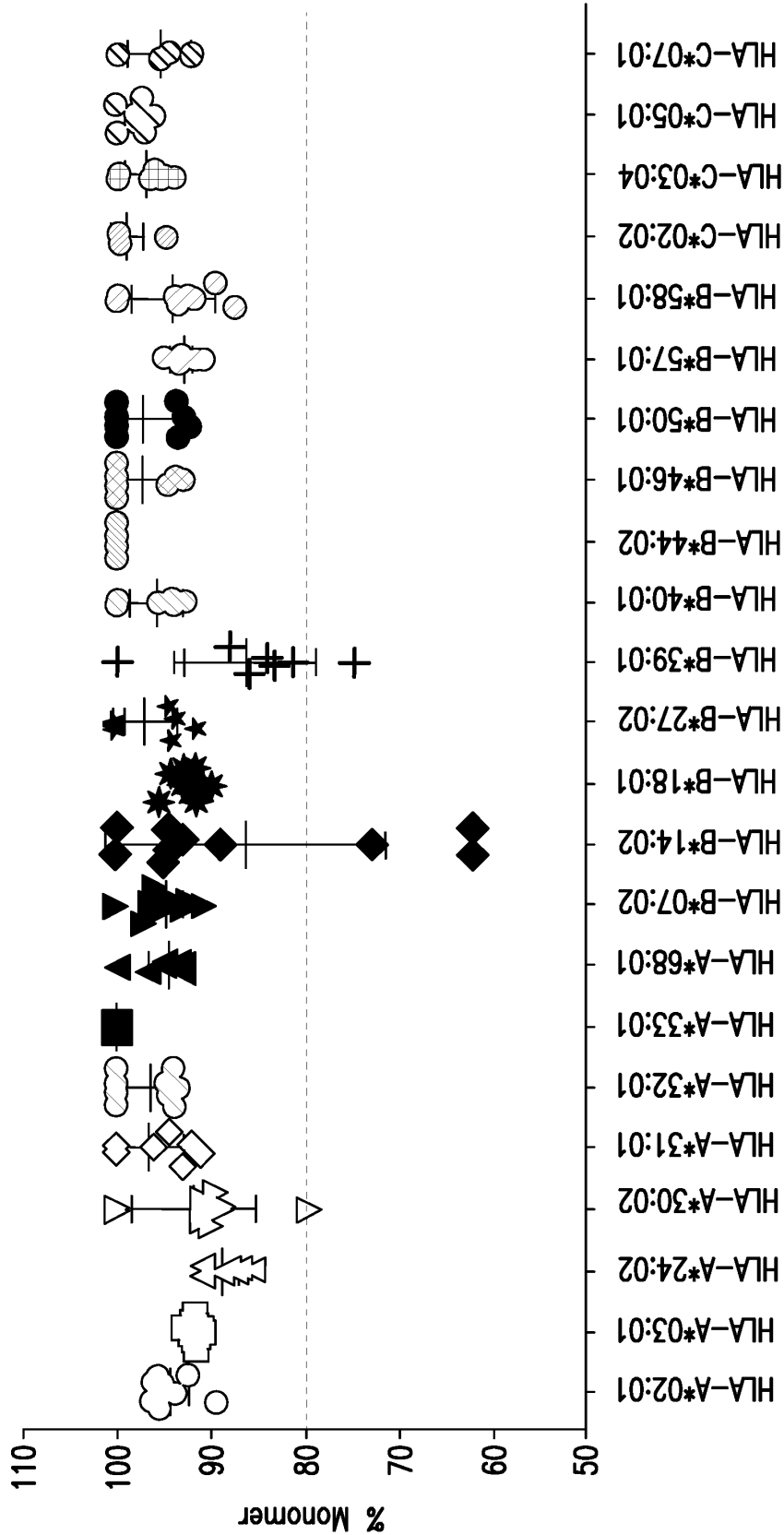


FIG. 25B

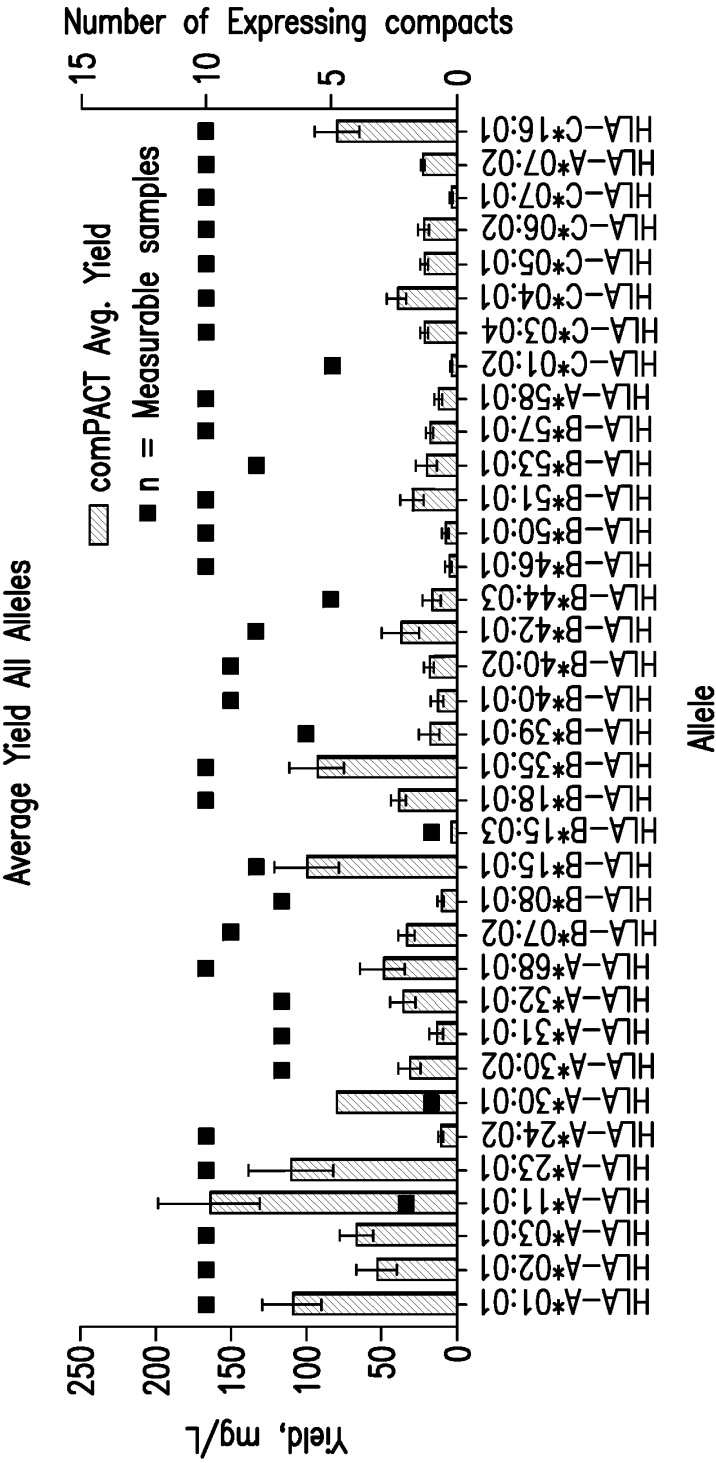


FIG. 25C

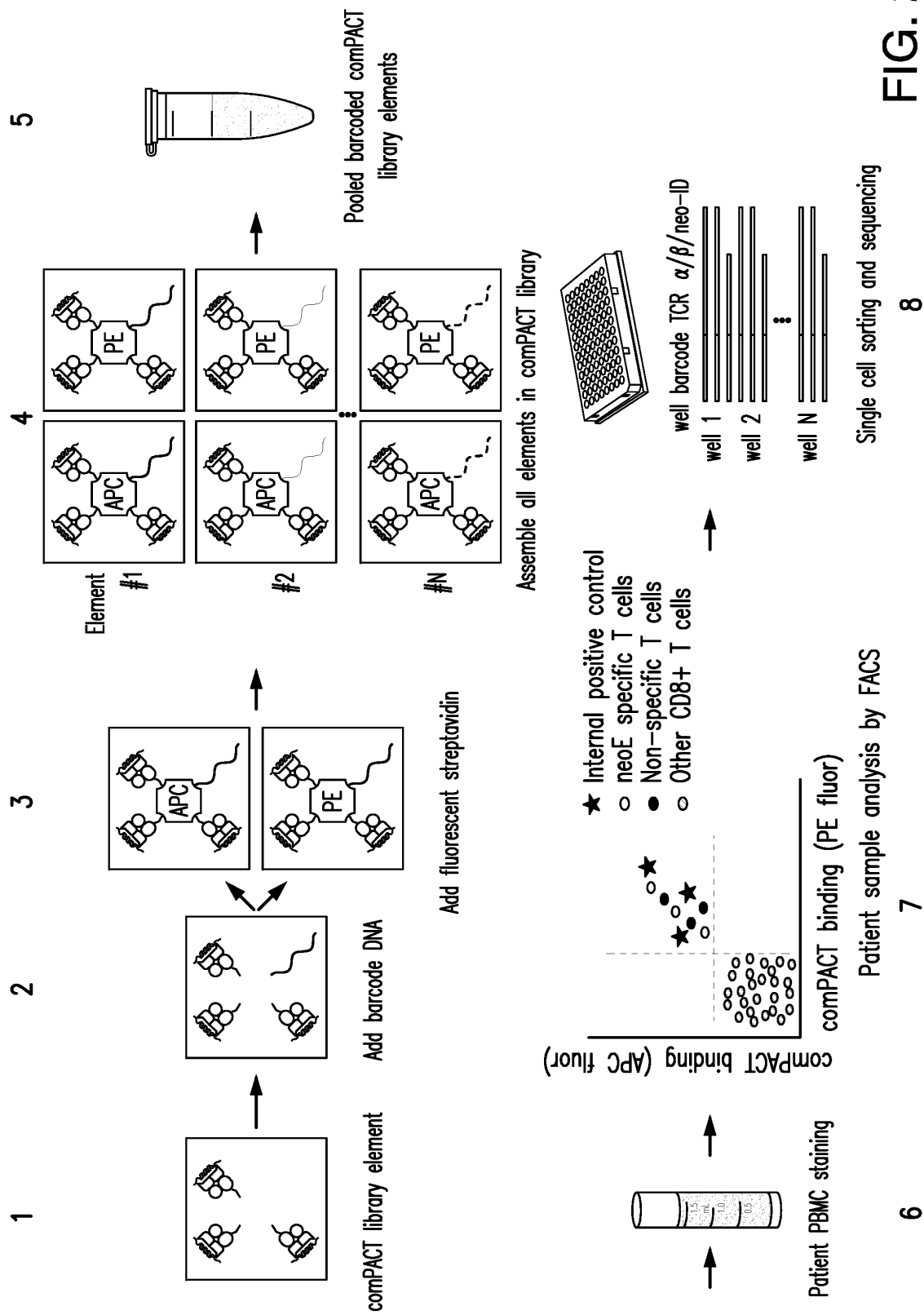


FIG. 26

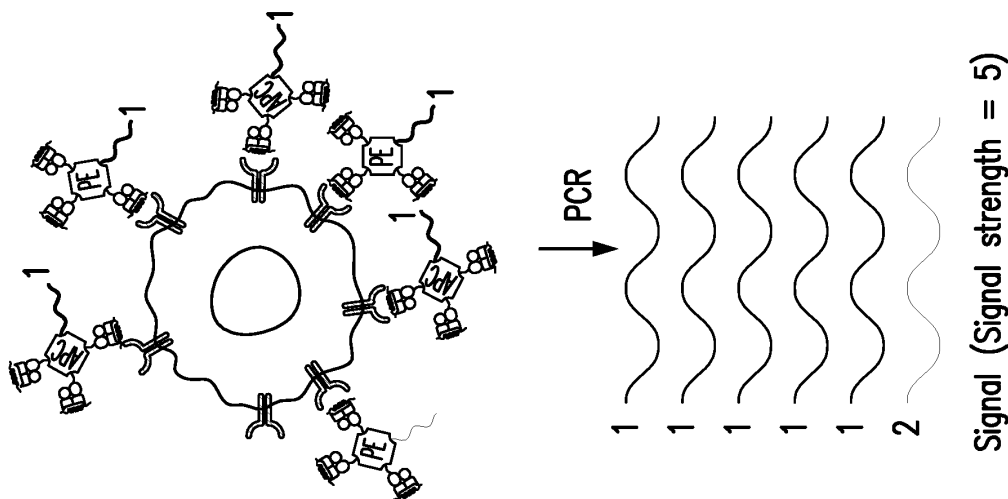


FIG. 27B

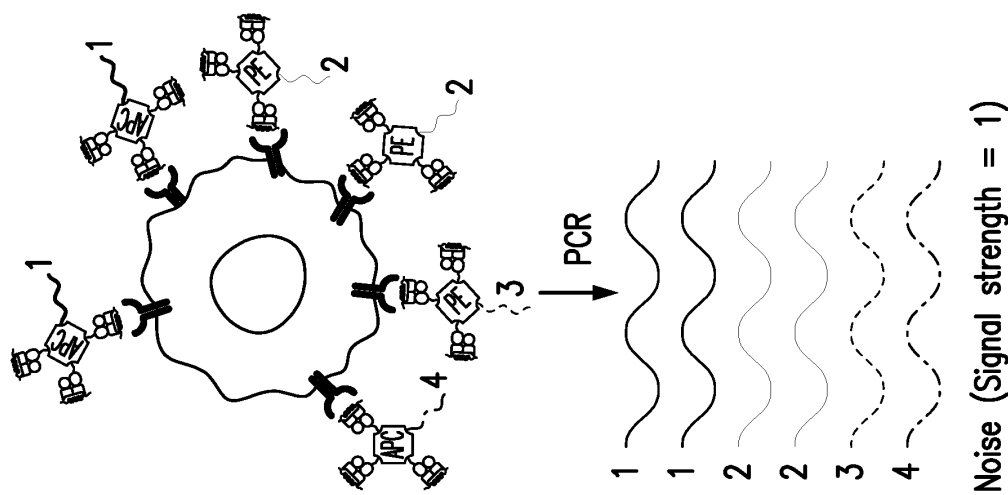


FIG. 27A

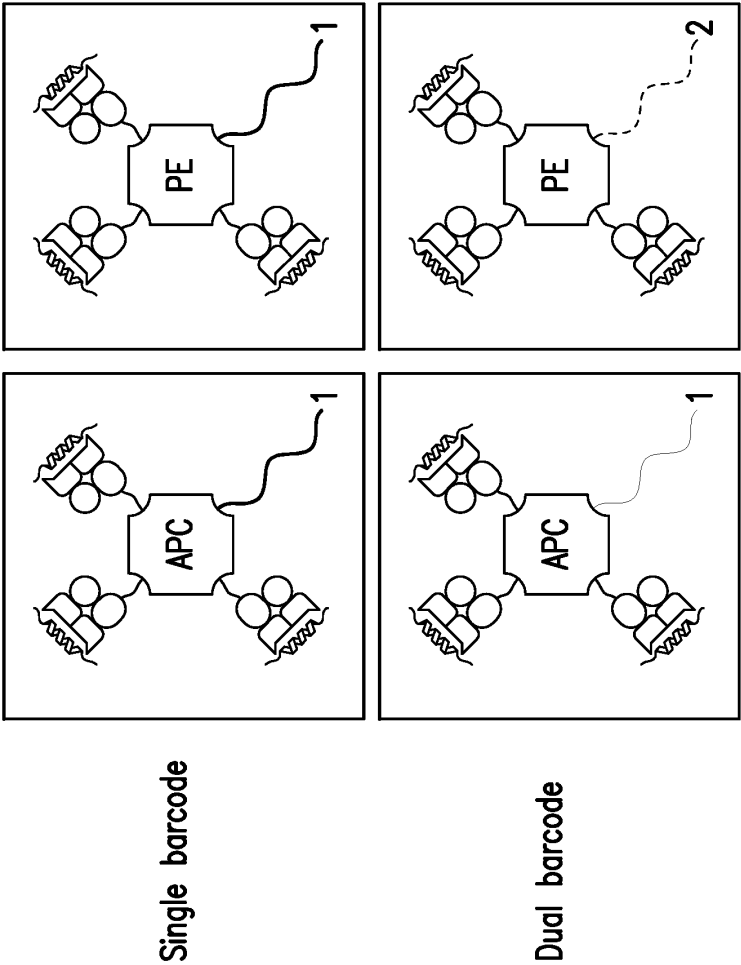


FIG. 28

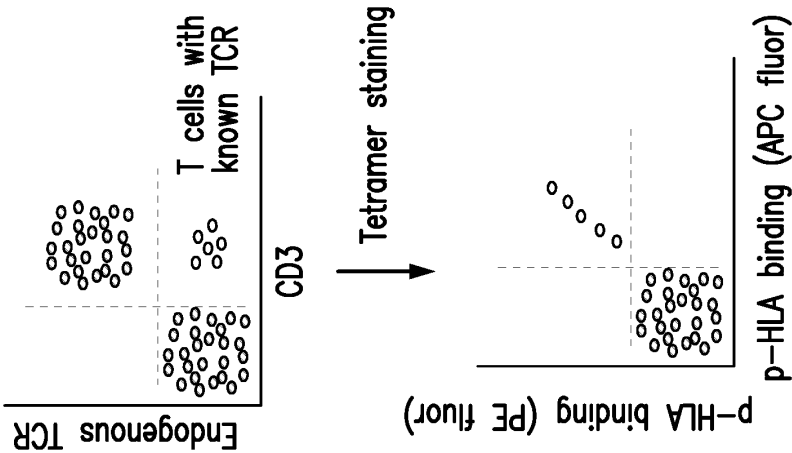


FIG. 29A

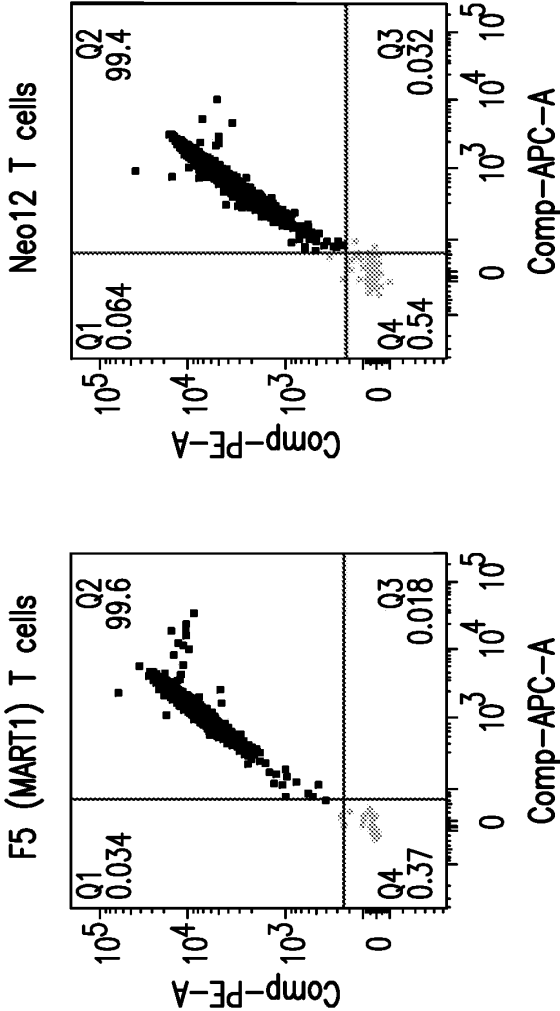


FIG. 29B

FIG. 29C

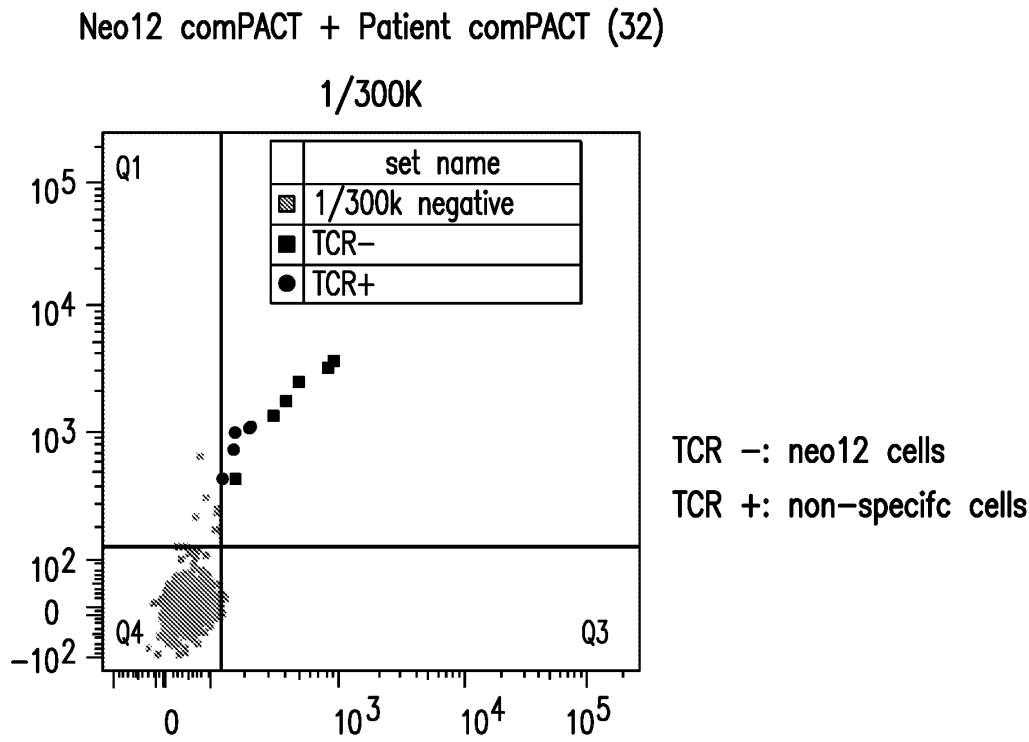


FIG. 30

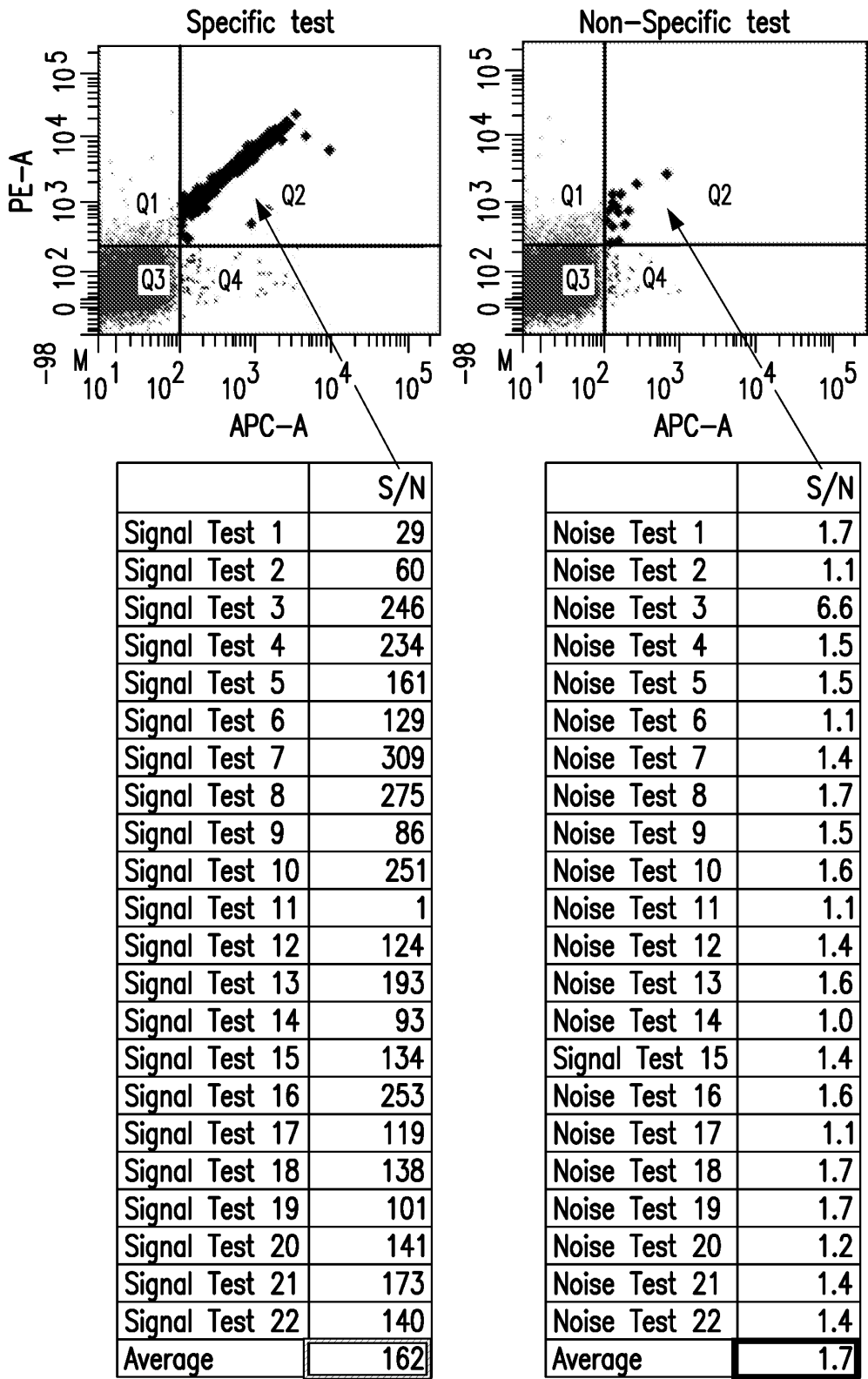


FIG. 31

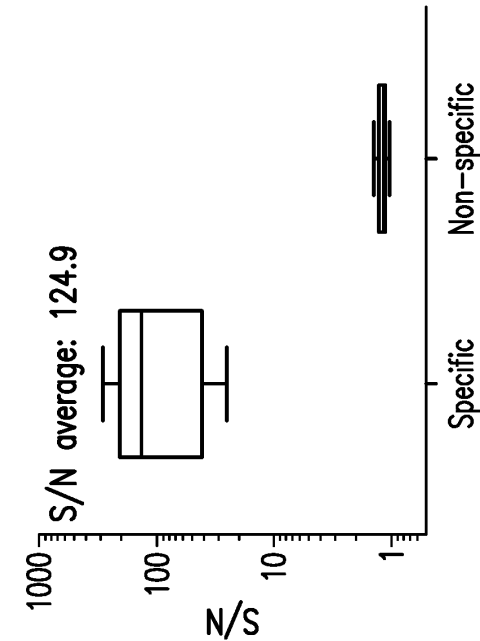


FIG. 32B

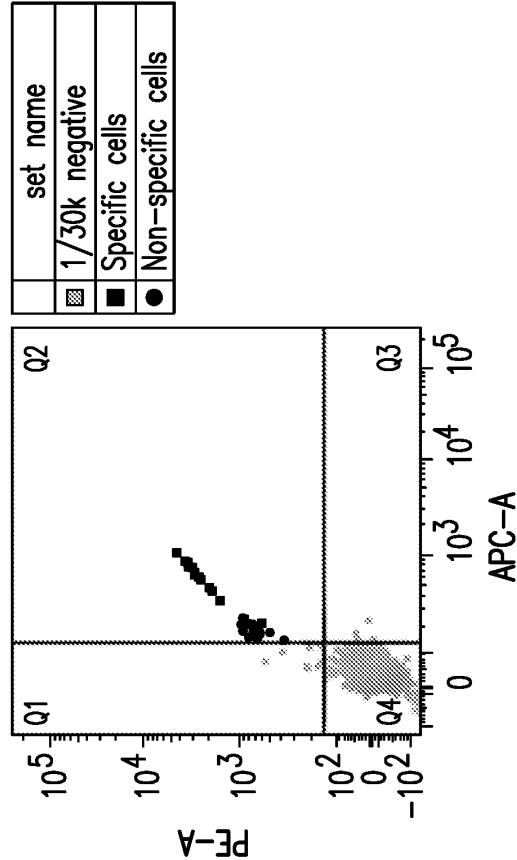
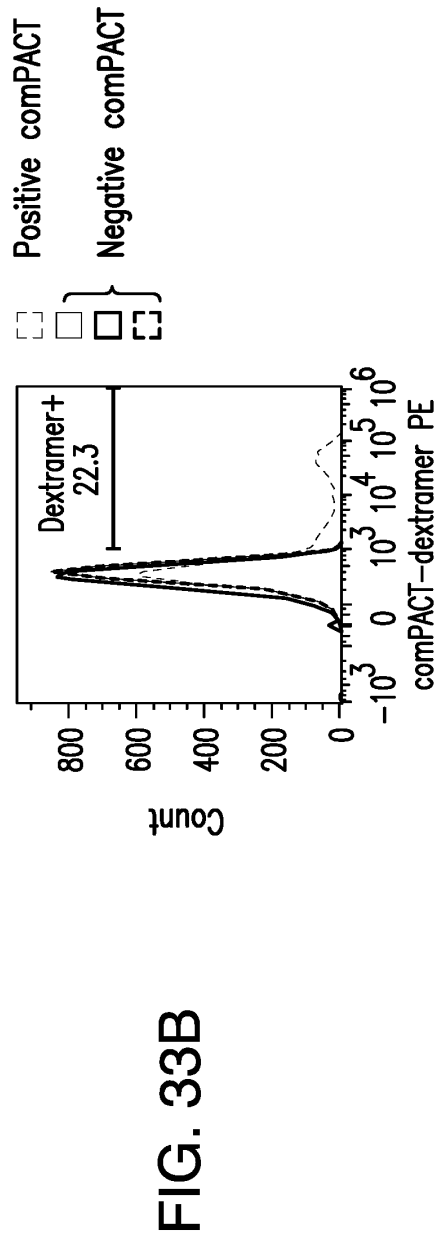
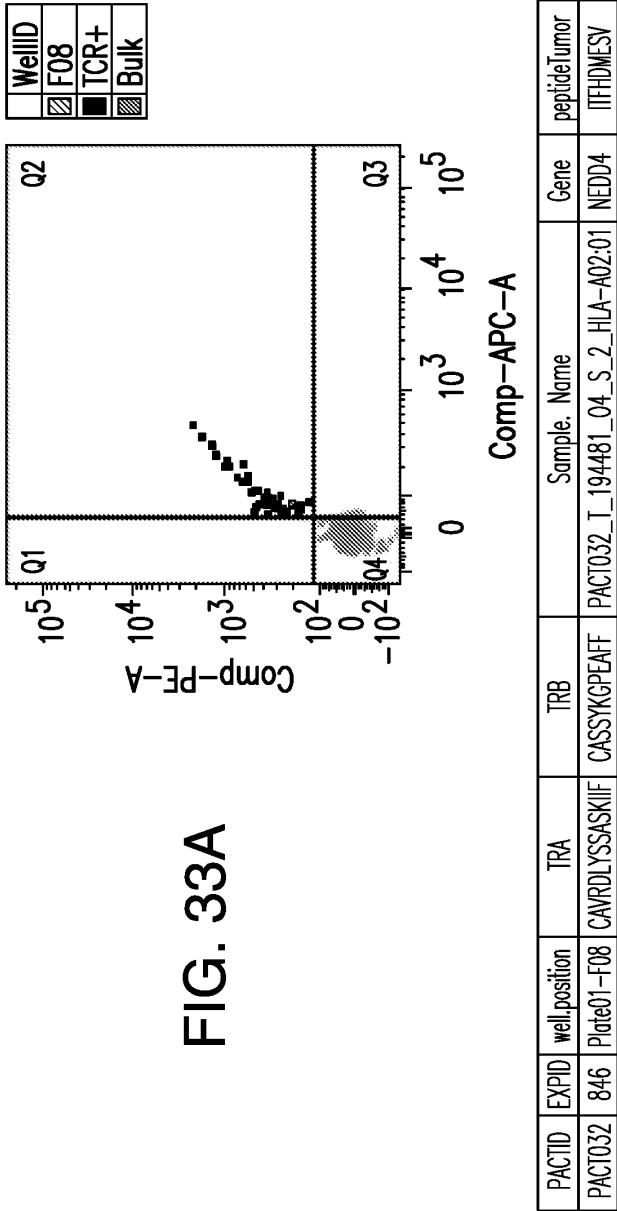


FIG. 32A



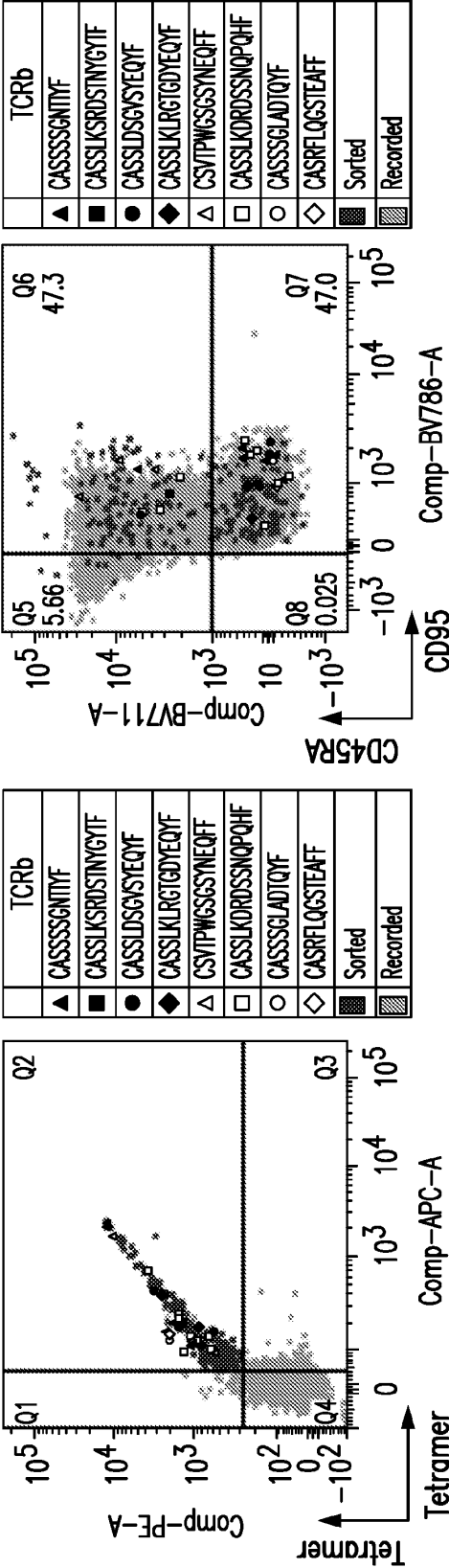


FIG. 34B

FIG. 34A

PACTID	TRA	TRB	Gene	peptideTumor	HLA	TCR ID	TCR (S/N1>10)	TCR (S/N2>10)	TCR (S/N2<10)	Avg S/N1	Avg S/N2
PACT077	CAMPQTSAGSYQLTF	CASSSSGNITVF	CDKL2	IMNIVTLL	HLA-A24:02	PACT077-TCR135/138	7		0	43.4	45.3
PACT077	CAVRTNYGSGSNLTF	CASSLKSRDSTNGYTF	SLC38A1	EYIPGTFL	HLA-A24:02	PACT077-TCR136	1		0	11.6	11.6
PACT077	CAVRLTGGNKLTF	CASSLDSGVSEYQVF	SLC38A1	EYIPGTFL	HLA-A24:02	PACT077-TCR137/145	4		0	29.3	29.3
PACT077	CALANQAGTALF	CASSLKLRGTGDYEYQVF	SLC38A1	EYIPGTFL	HLA-A24:02	PACT077-TCR139	2		0	45.1	45.1
PACT077	CAYRNFGENKLT	CSVTPWGSNSNEQVF	PARK2	KTSVALHL	HLA-A24:01	PACT077-TCR140/144	2		0	19.0	19.0
PACT077	CAVGRDSYQLIWF	CASSLKORDSSNQPHF	SLC38A1	EYIPGTFL	HLA-A24:02	PACT077-TCR142	7		0	25.2	25.2
PACT077	CAVNSYQLIWF	CASSSGLADTQVF	MADD	HLSELGLVD	HLA-A24:01	PACT077-TCR143		1	0	1.4	21.1
PACT077	CAWPNNDHRF	CASRFQSGTEAFF	SLC38A1	DEYIPGTFL	HLA-B18:01	PACT077-TCR164		1	0	1.9	32.5

FIG. 34C

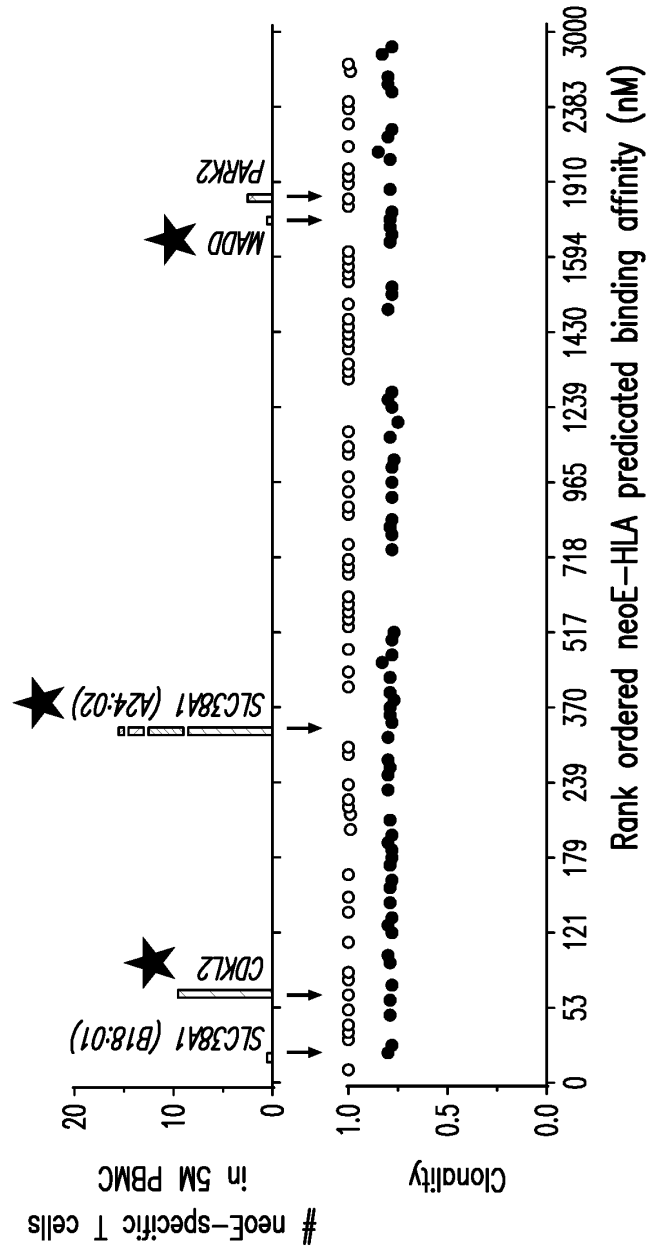


FIG. 34D

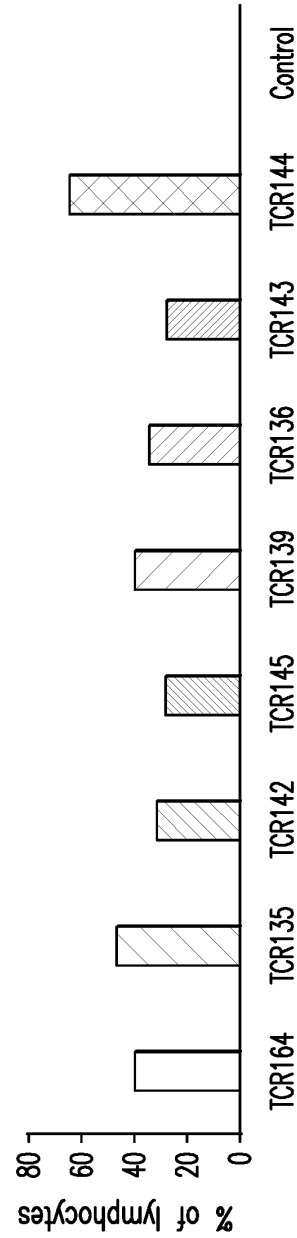


FIG. 34E

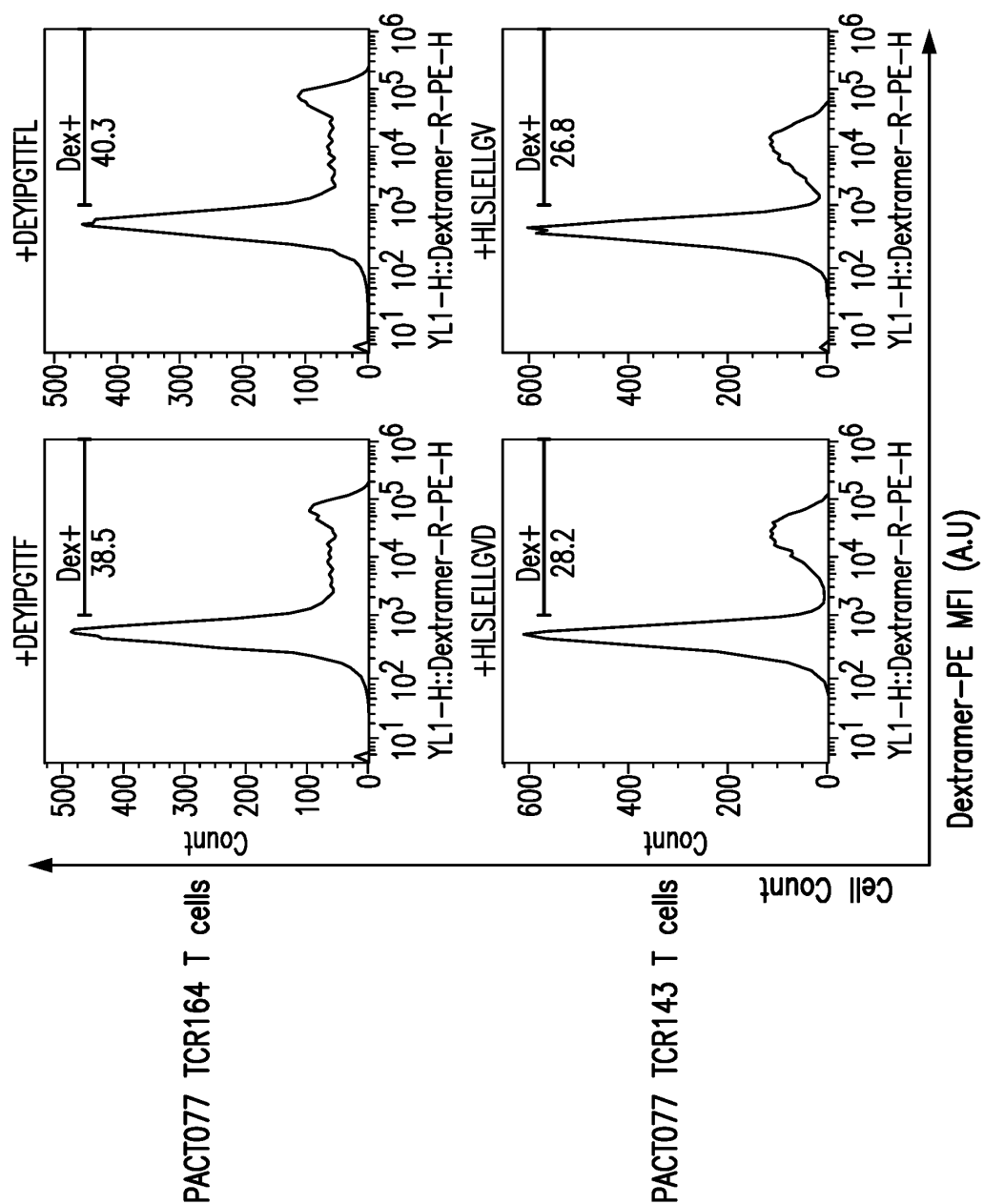


FIG. 35A

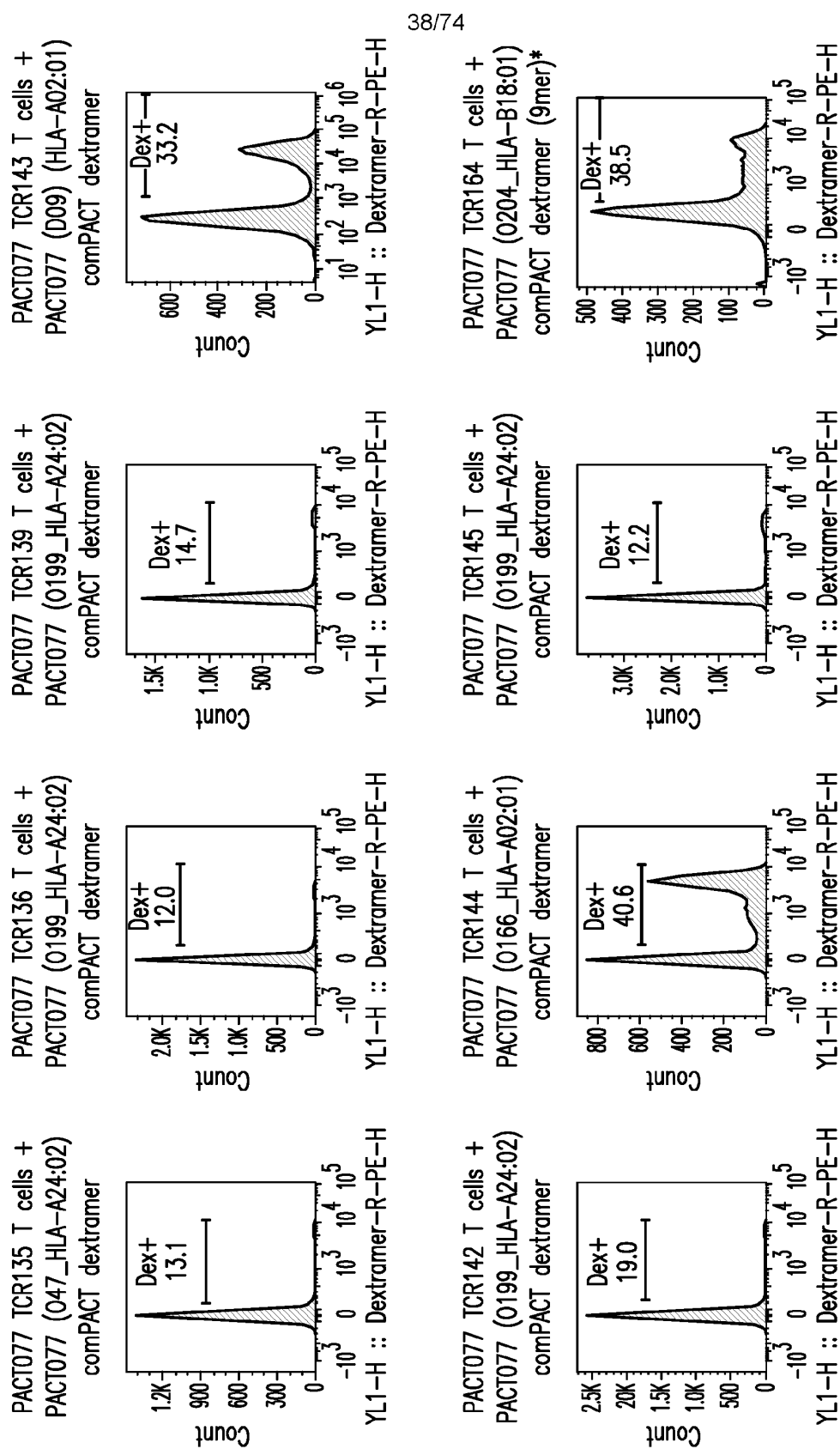
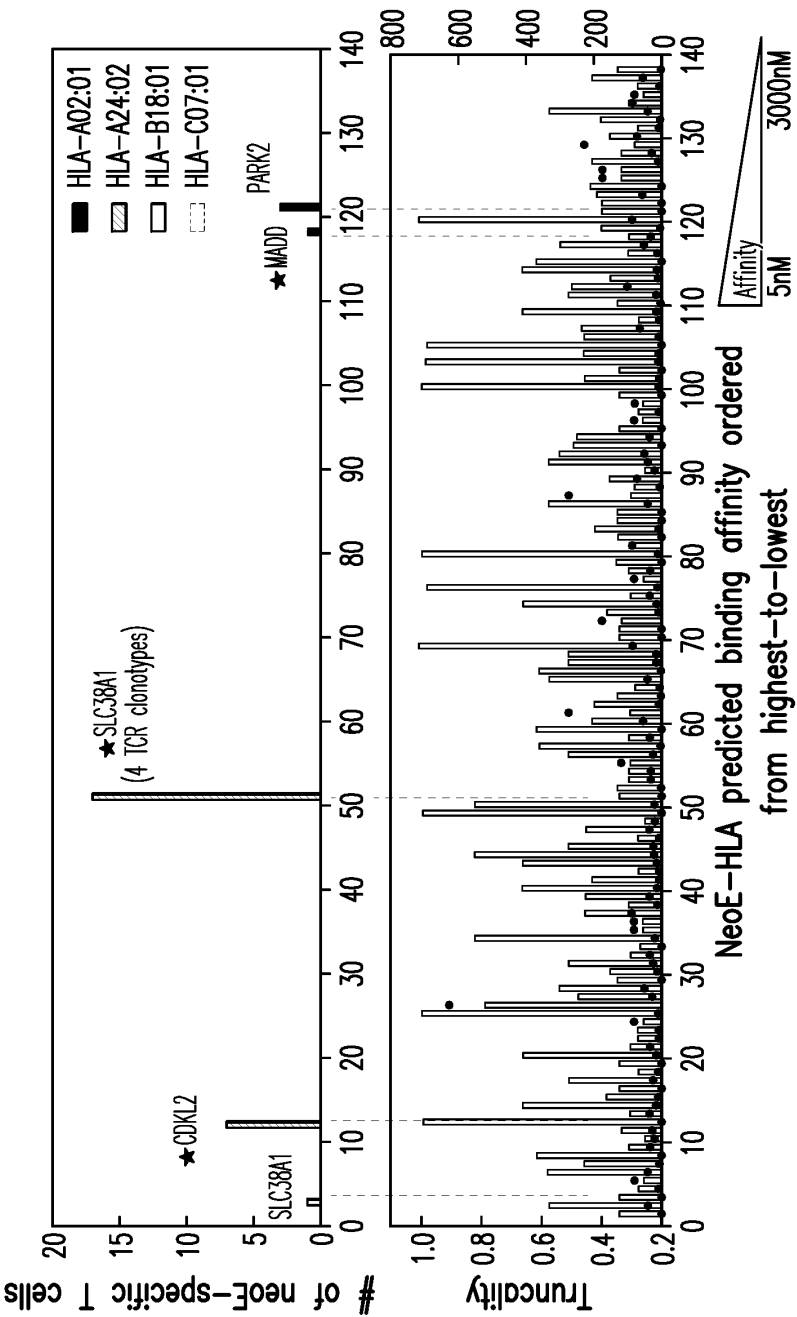
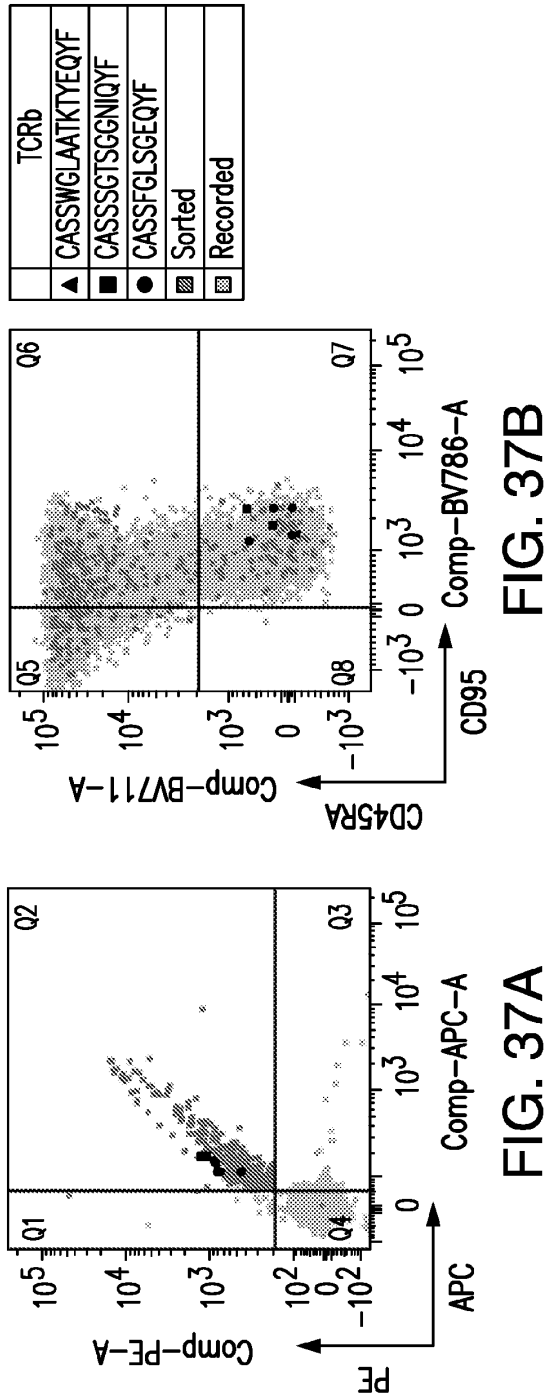


FIG. 35B



★ TCR clones detected in both PBMC and TILs
CDKL2: serine/threonine protein kinase. SLC38A1: Glutamine transporter. MADD: TNF- α receptor for apoptosis. PARK2: ubiquitin ligase.

FIG. 36



Well ID	PE S/N	APC S/N	PE/APC Ratio	top1.NeoAg	top2.NeoAg	tra.CDR3	trb.CDR3	Gene	peptide/tumor	HLA	TCR ID
Plate01-B06	50.25	3477.40	69.20	LQEQVALKY	LTRPFNFY	CAPRGDAGNMILTF	CASSLSDGPQPQHF	PPFBP2	LQEQVALKY	HLA-A01:01	
Plate01-H06	48.16	1.60	30.10	LQEQVALKY	LQEQVALKY	CLVGNINDMRF	CASSEACSTYEQYF	PPFBP2	LQEQVALKY	HLA-A01:01	
Plate02-A06	37.06	28.47	1.30	RCSPEQLKKAW	RCSPEQLKKAW	CAVRDSMEYGNKLVF	CASSGTSGGNIQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR166
Plate03-B04	35.87	14.07	2.55	RCSPEQLKKAW	RCSPEQLKKAW	CAVRDSMEYGNKLVF	CASSGTSGGNIQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR166
Plate02-F08	66.18	42.22	1.57	RCSPEQLKKAW	RCSPEQLKKAW	CAVRDSNYGQNFV	CASSWGGLAATKTYEQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR165
Plate02-A04	42.22	14.36	2.94	RCSPEQLKKAW	RCSPEQLKKAW	CASLGAGGTSYGNLTF	CASSFGLSGEQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR167
Plate01-B03	90.62	56.00	1.62	RCSPEQLKKAW	RCSPEQLKKAW	CASLGAGGTSYGNLTF	CASSFGLSGEQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR167
Plate02-H08	26.75	13.52	1.98	RCSPEQLKKAW	RCSPEQLKKAW	CASLGAGGTSYGNLTF	CASSFGLSGEQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR167
Plate03-E11	13.14	11.80	1.11	RCSPEQLKKAW	RCSPEQLKKAW	CASLGAGGTSYGNLTF	CASSFGLSGEQYF	PLEKHG3	RCSPEQLKKAW	HLA-B57:01	PACT049-TCR167

FIG. 37C

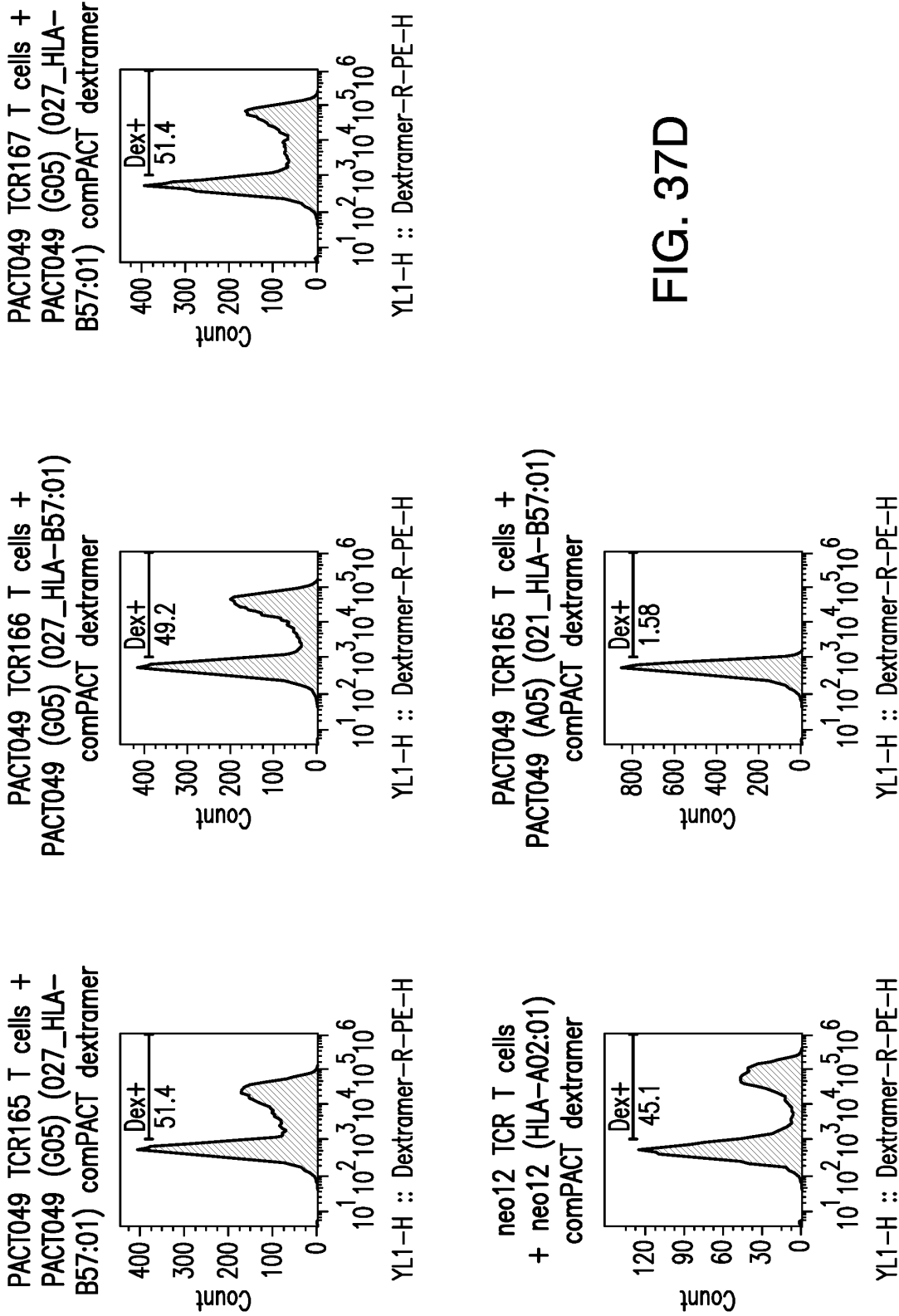


FIG. 37D



FIG. 38A

PACT ID	HLA- type									Cancer	Number of Targets	TCRs found in TILs	
	A02:01	A24:02	B57:01	A03:01	C02:02	B18:01	A01:01	C05:01	A11:01				
PACT037	0	0	0	0	2	0	0	0	0	bladder cancer	1	1	0
PACT036	0	0	0	2	0	0	0	0	0	Bladder	1	1	0
PACT035	7	0	0	0	0	0	0	0	0	colorectal cancer	1	1	0
PACT049	0	0	3	0	0	0	0	0	0	colorectal cancer	1	1	0
PACT052	0	0	1	0	0	0	0	0	0	colorectal cancer	1	1	0
PACT053	0	0	0	1	0	0	0	0	0	colorectal cancer	1	1	0
PACT032	1	0	0	0	0	0	0	0	0	melanoma	1	1	0
PACT077	2	5	0	0	0	1	0	0	0	melanoma	5	5	4
PACT078	0	0	0	0	0	0	1	0	0	melanoma	1	1	1
PACT133	0	0	0	2	0	0	0	0	0	melanoma	1	1	0
PACT131	0	0	0	0	0	0	0	1	3	endometrial	3	3	0
PACT056	0	0	0	0	0	0	0	0	0	colorectal cancer	0	0	0
PACT095	0	0	0	0	0	0	0	0	0	colorectal cancer	0	0	0

FIG. 38B

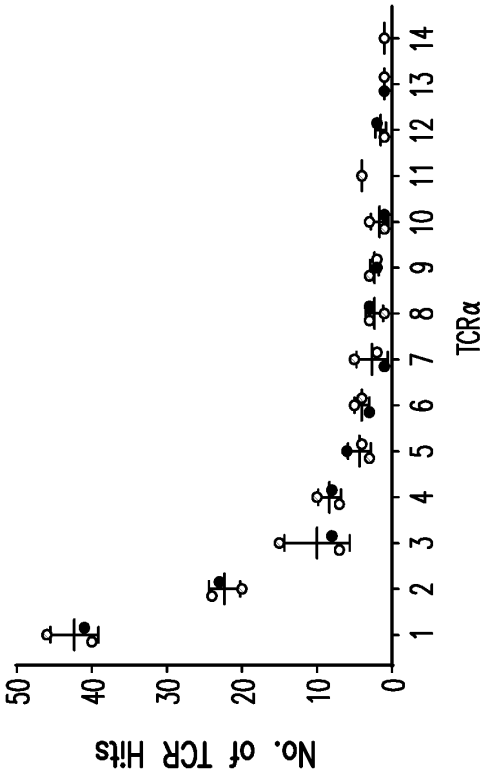


FIG. 39B

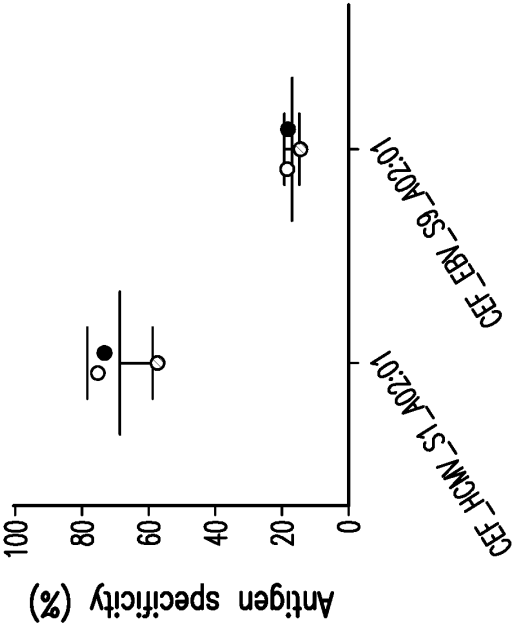


FIG. 39A

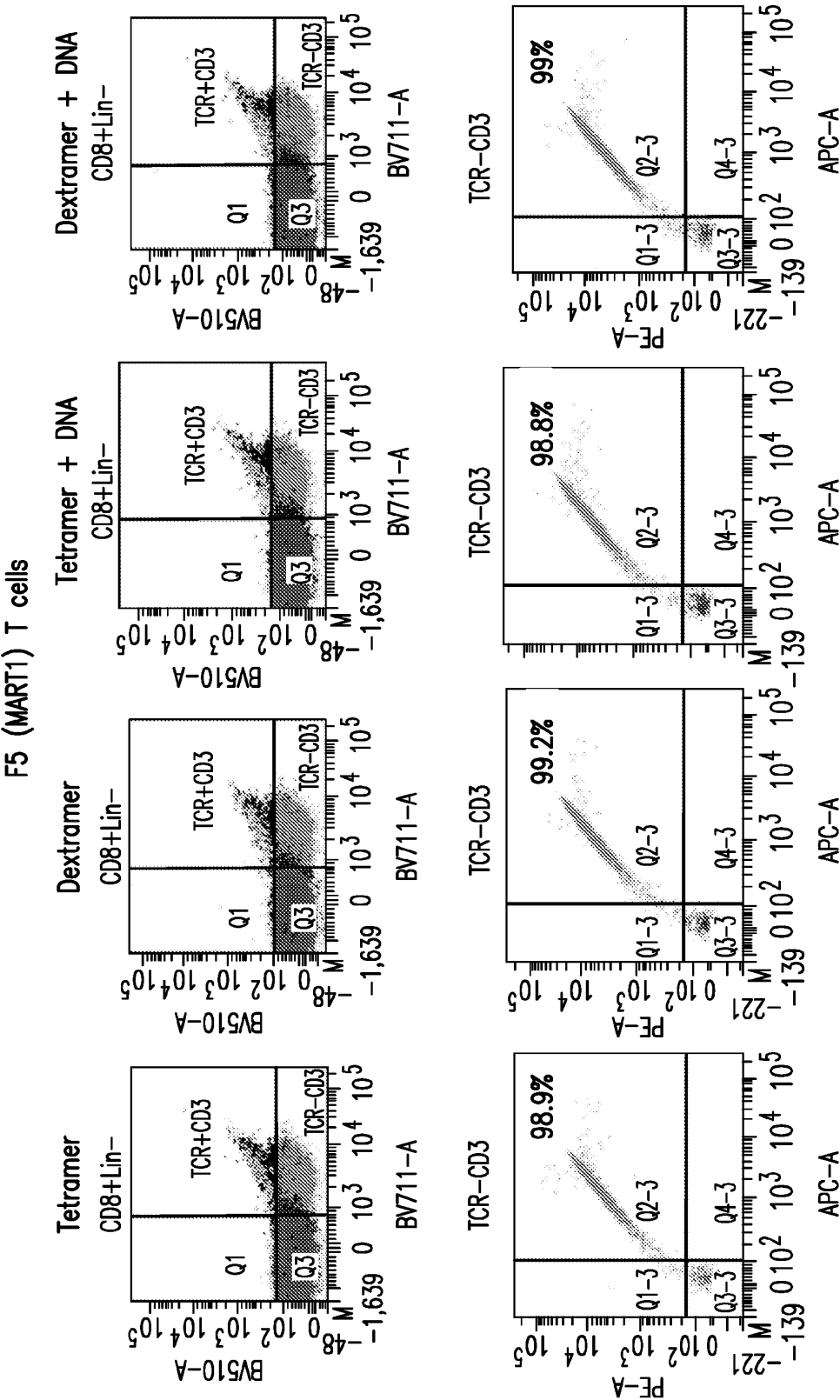


FIG. 40A

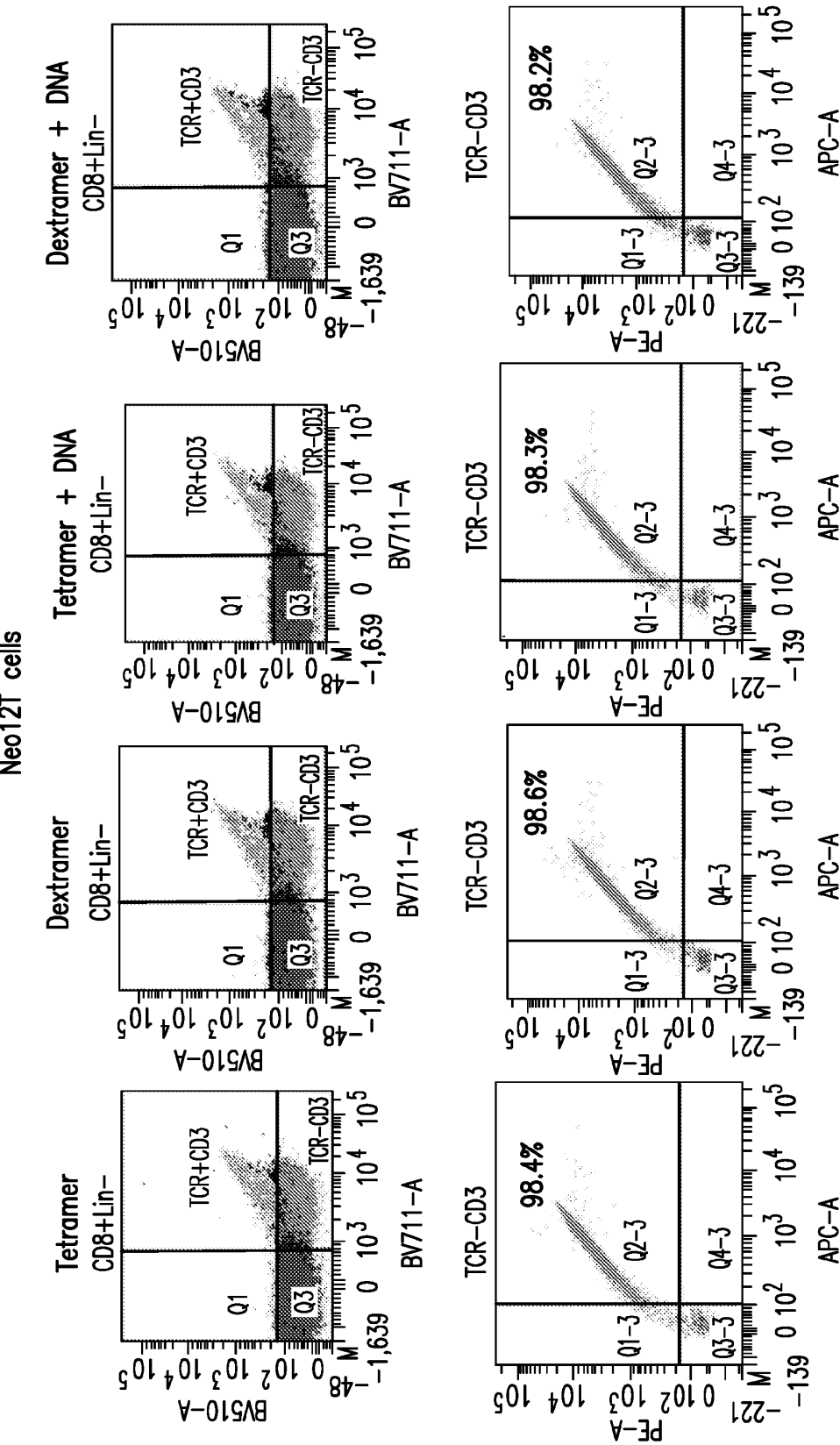


FIG. 40B

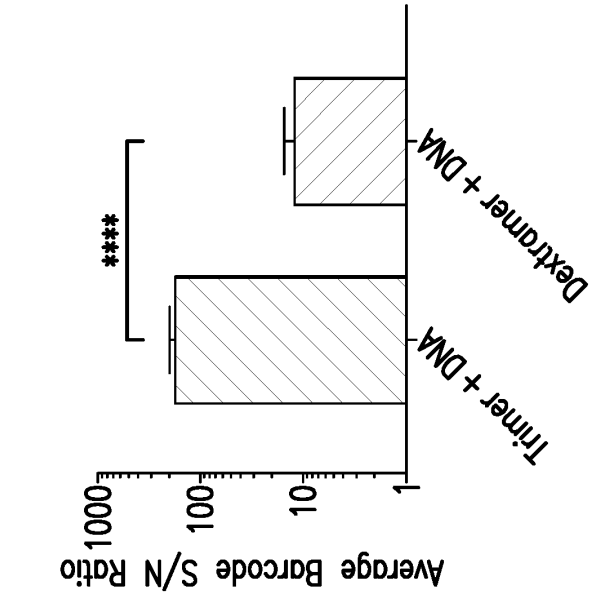


FIG. 41B

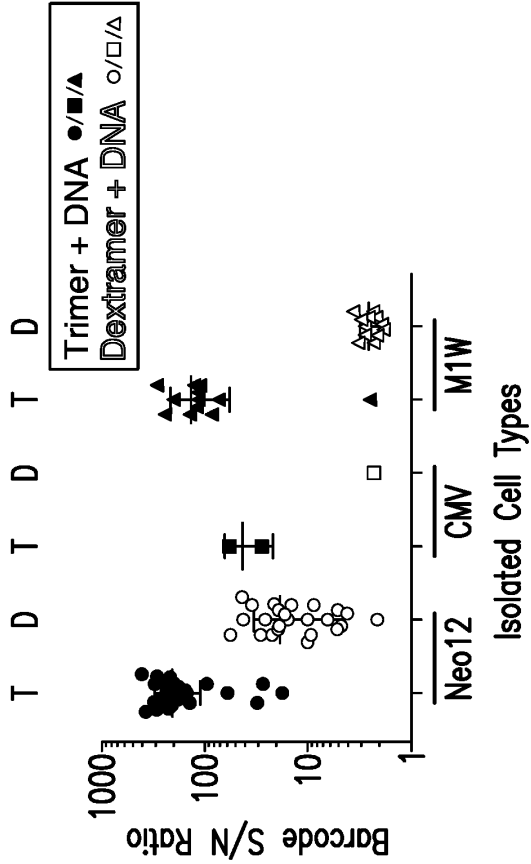
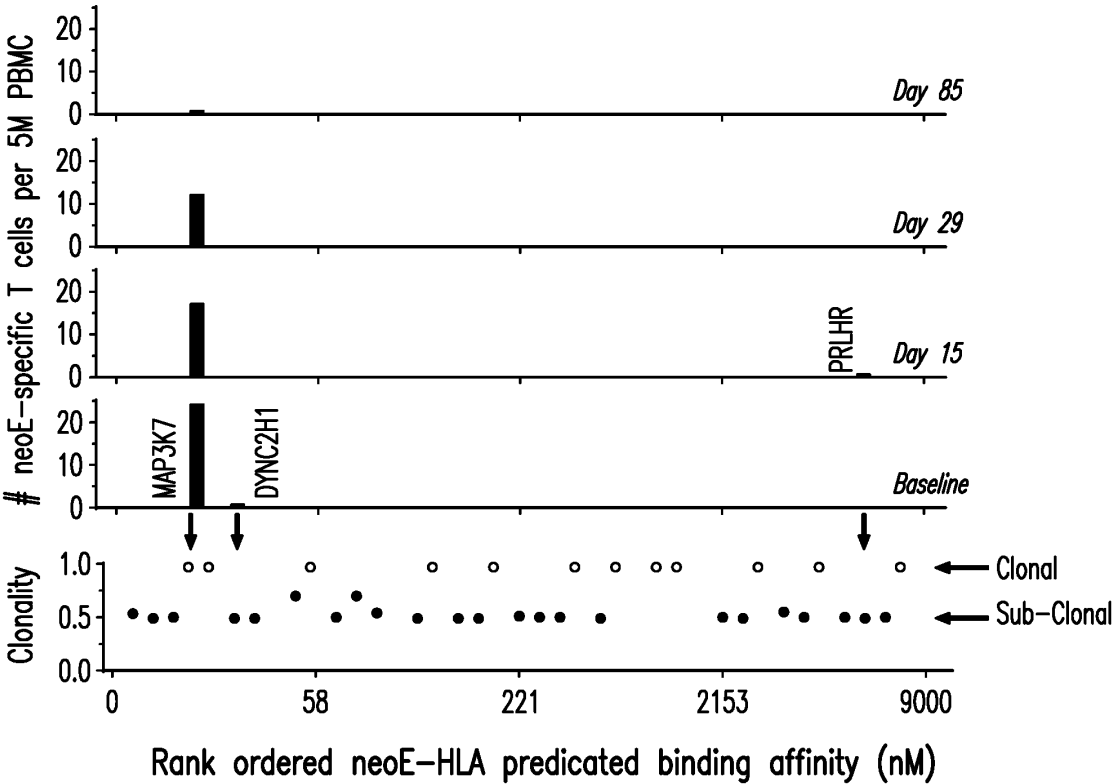


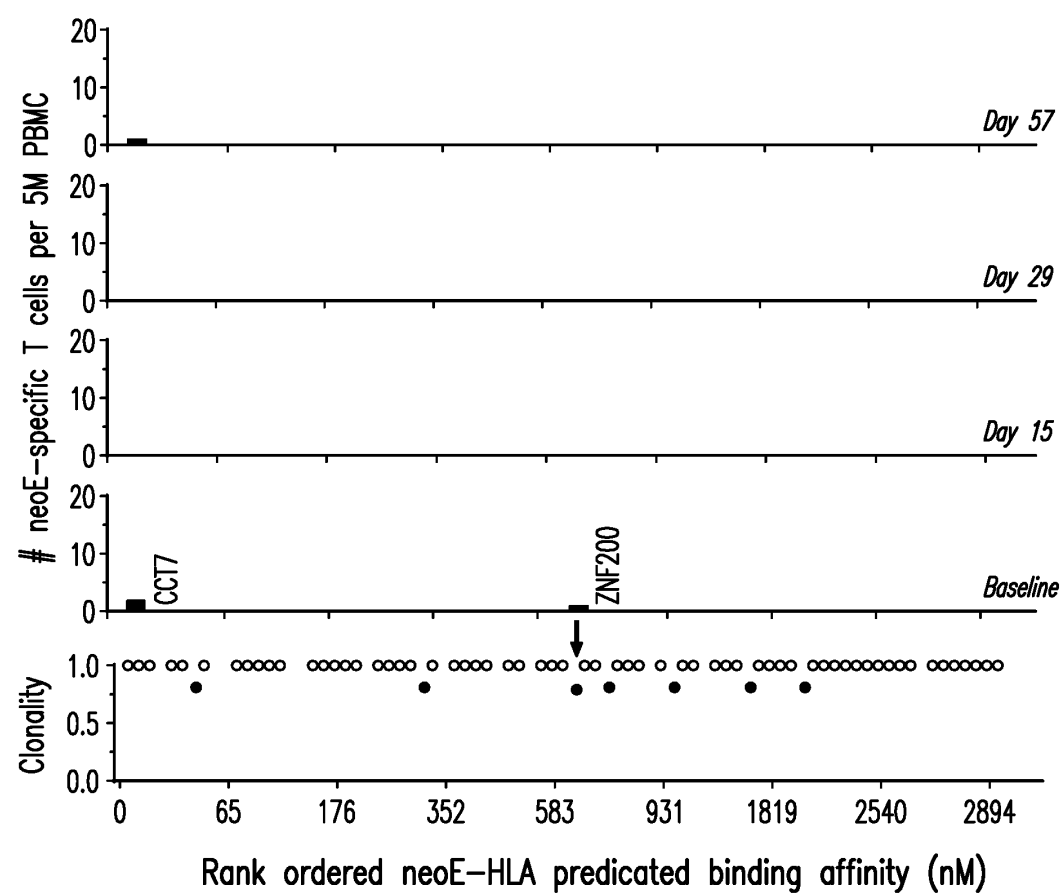
FIG. 41A



PACT157 pMMR Colorectal Cancer

Gene	MAP3K7	DYNC2H1	PRLHR
HLA	A02:01	A02:01	C06:02
neoE	TLY(D)HQLQPL	LLFGDLLS(R)VA	SVKLLH(R)NRW

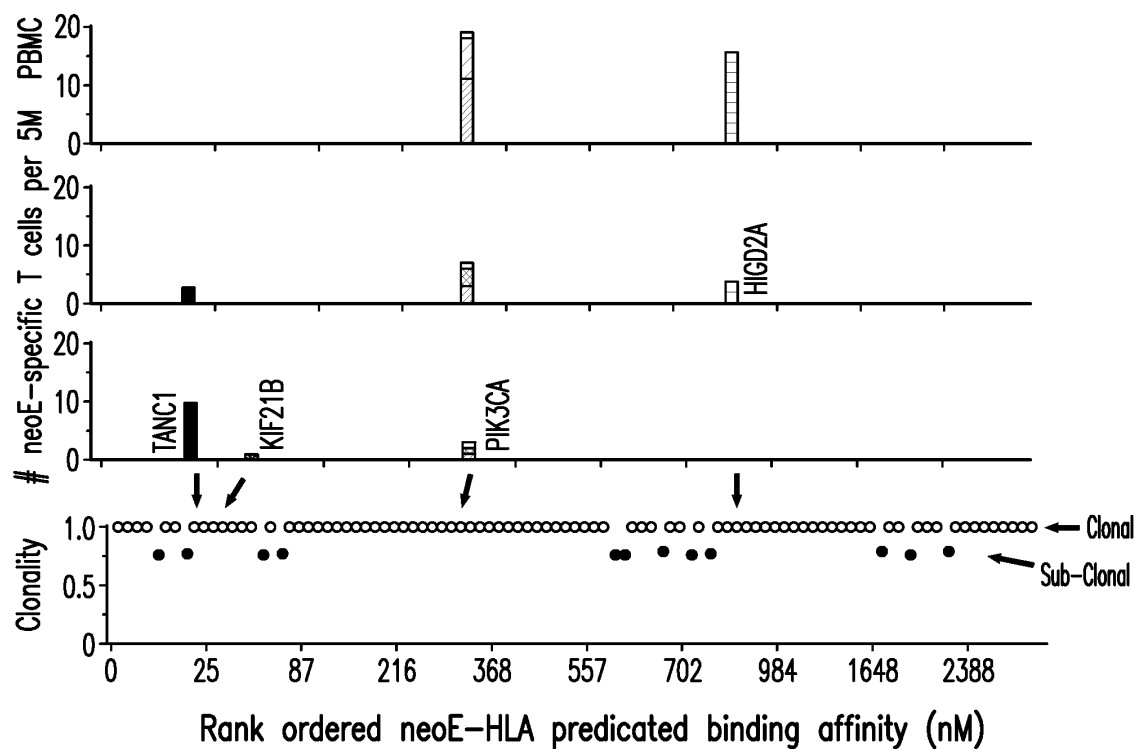
FIG. 42A



PACT132 pMMR Colorectal Cancer

Gene	CCT7	ZNF200
HLA	A68:02	C12:03
neoE	ETIKNPRL(S)TV	KQSFILRVL(P)

FIG. 42B



PACT31 Endometrial Cancer

Gene	TANC1	KIF21B	PIK3CA	HIGD2A
HLA	C05:01	A11:01	A11:01	B35:01
neoE	STDSPS(C)STL	ARSVSSIM(V)R	RA(D)IDKIYVR	LATAAAI(L)TYG

FIG. 42C

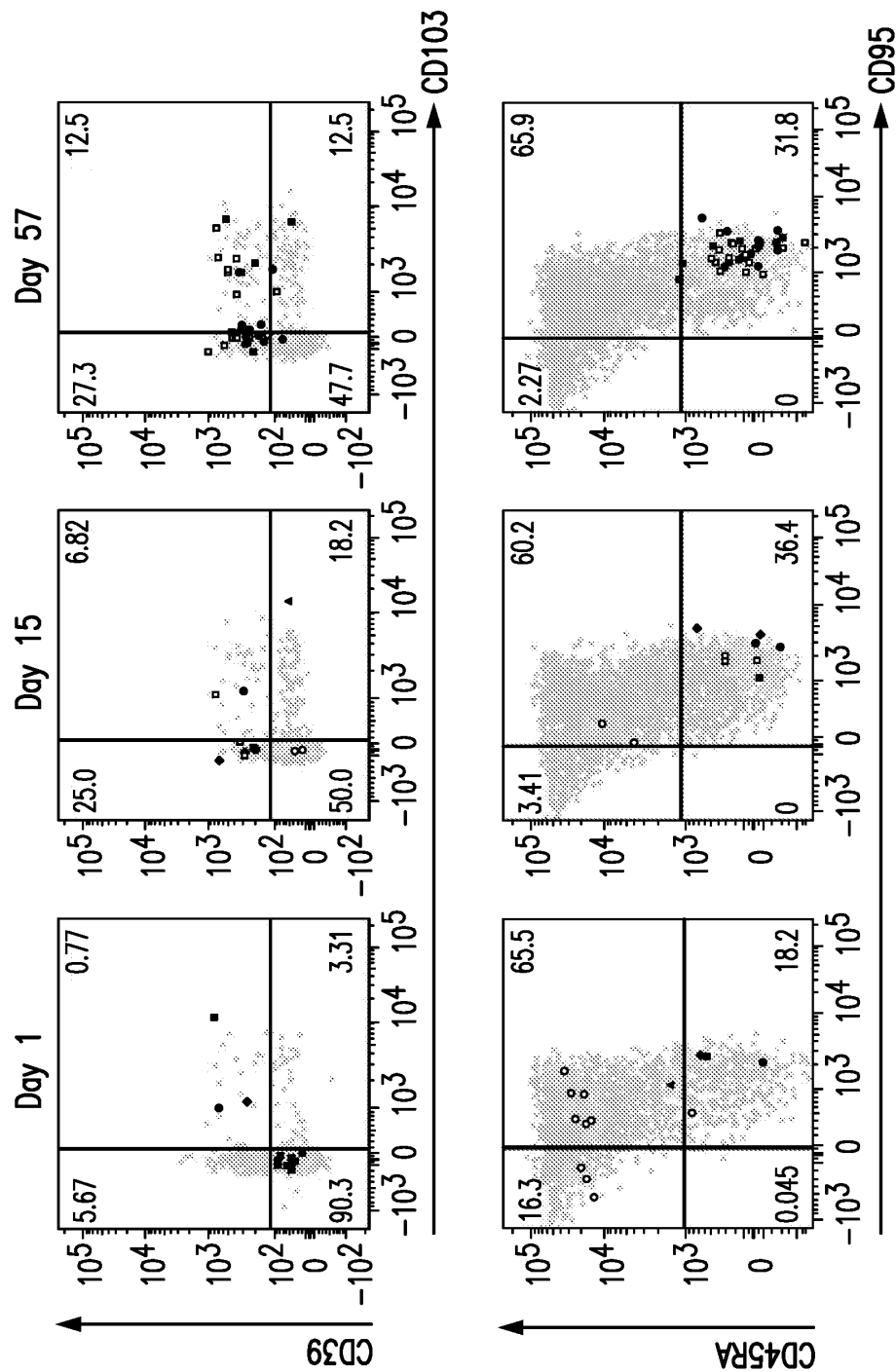


FIG. 43

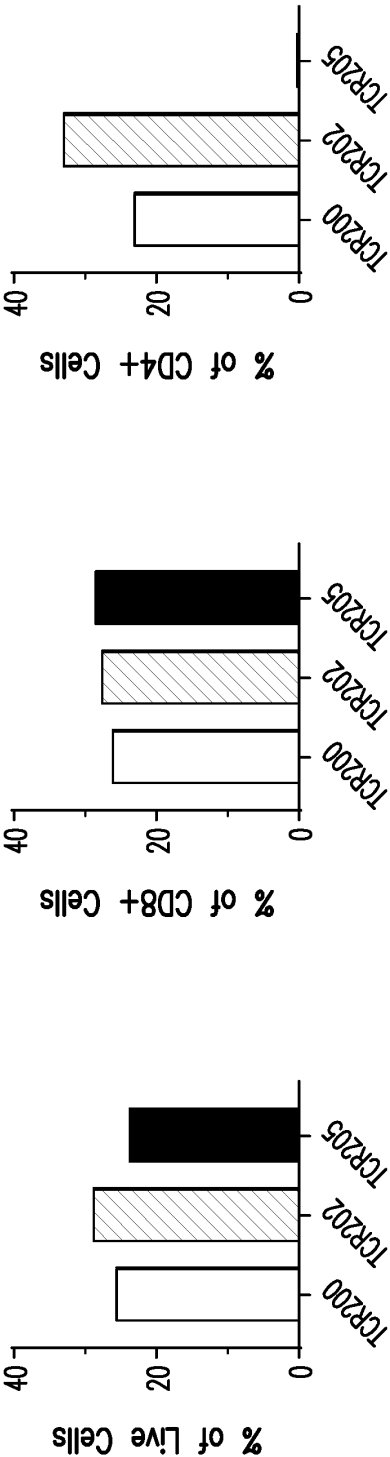


FIG. 44A

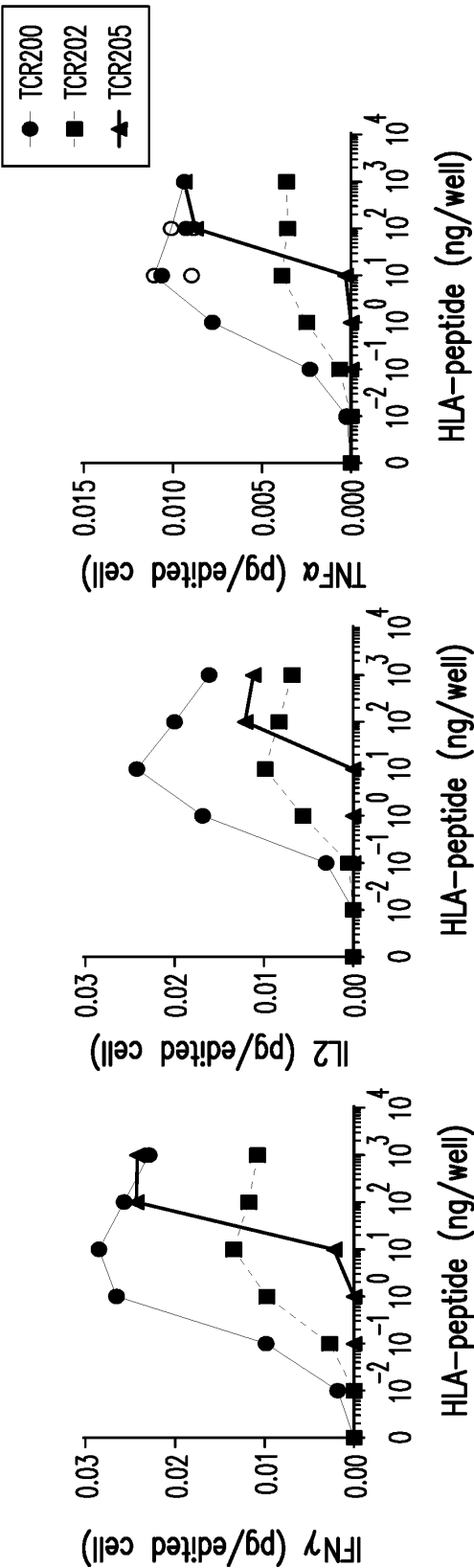


FIG. 44B

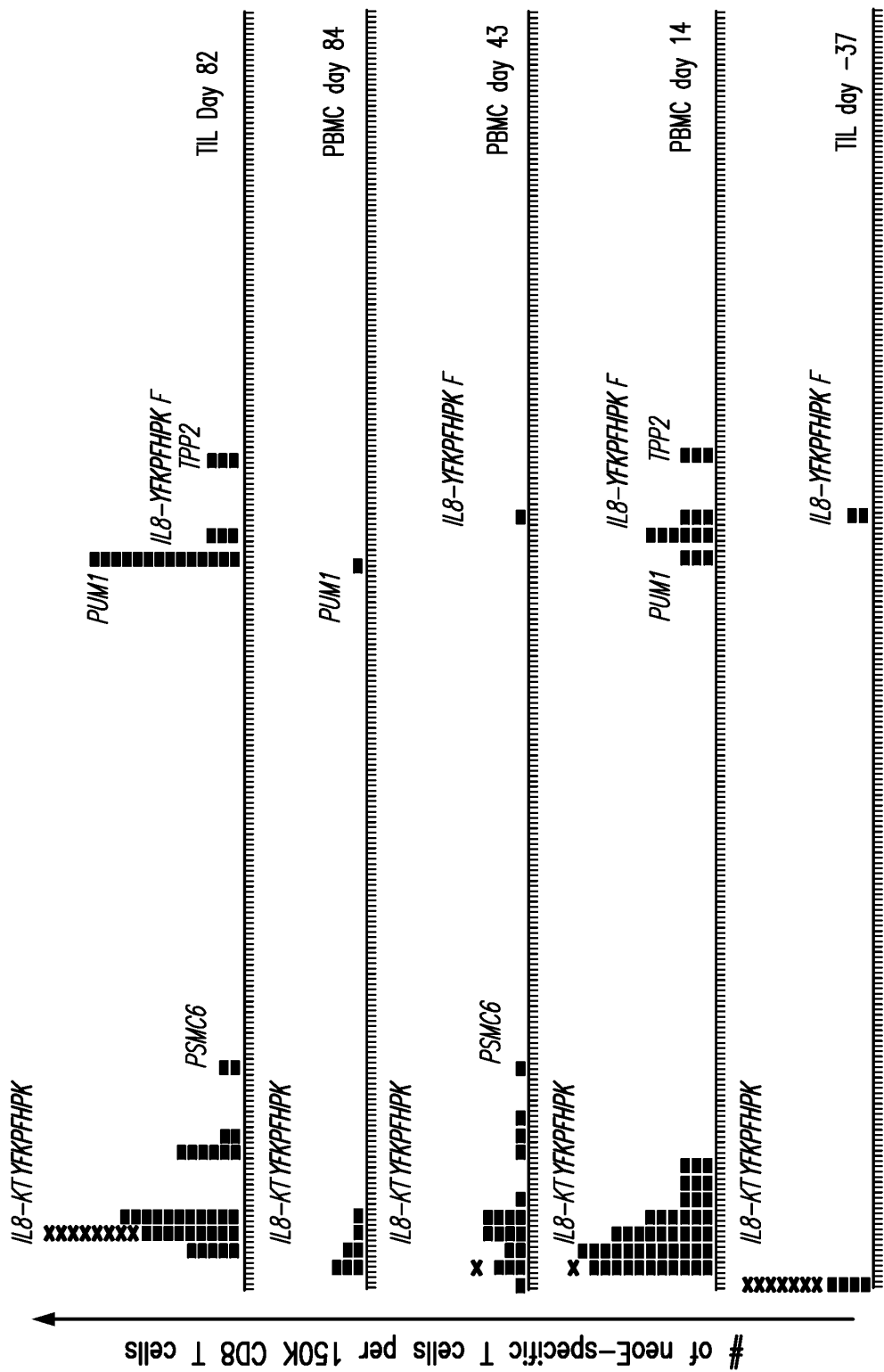


FIG. 45

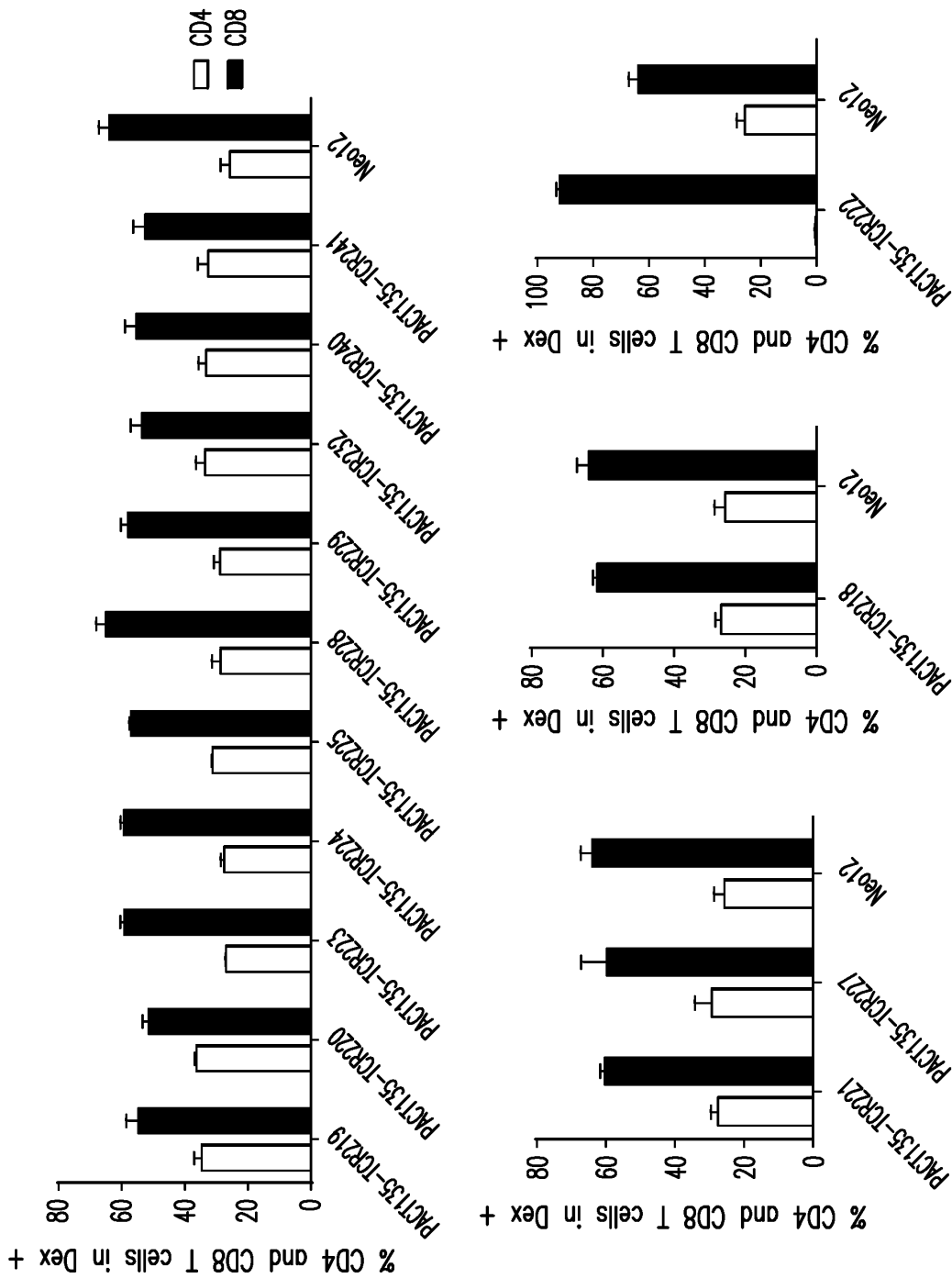


FIG. 46

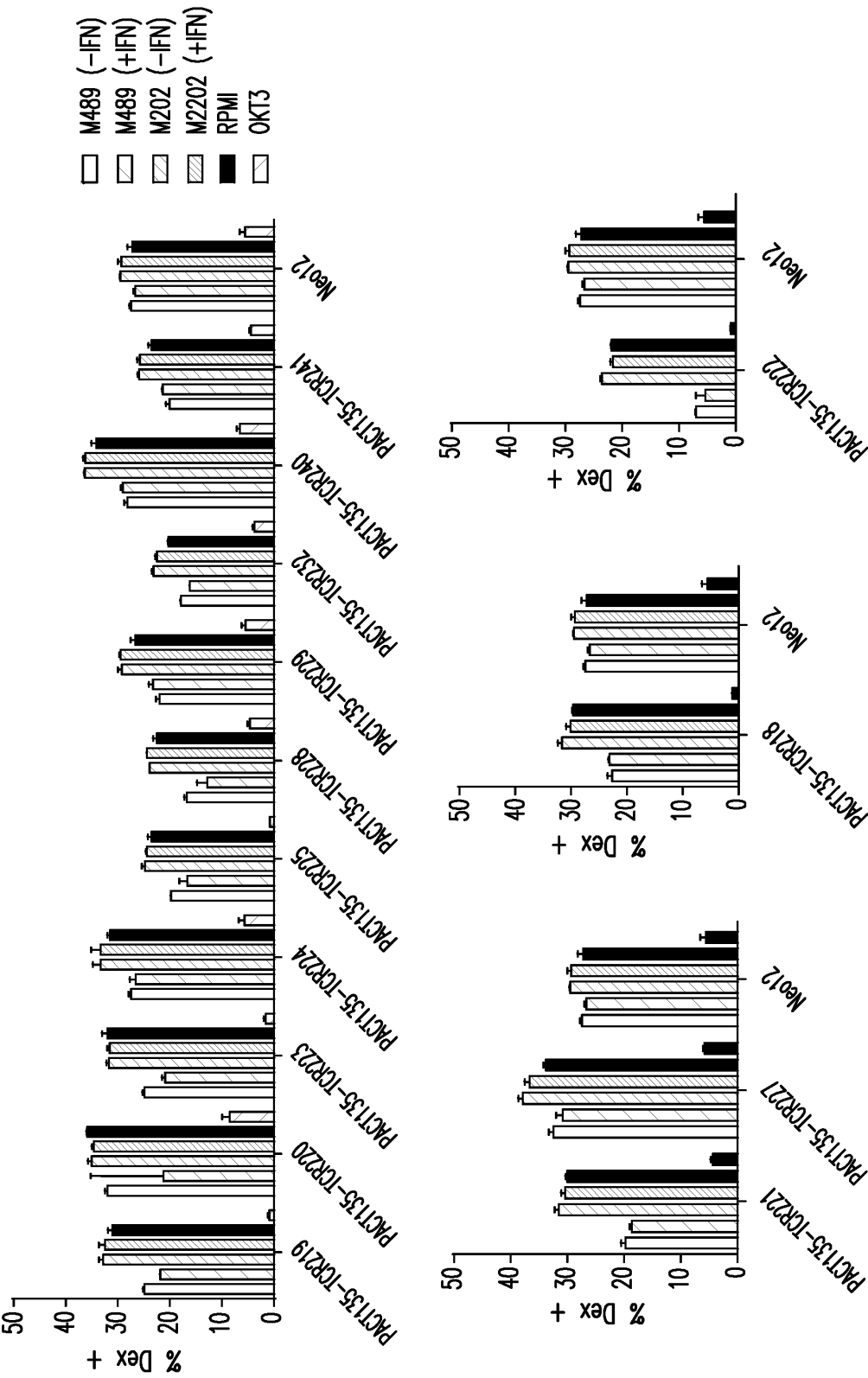


FIG. 47

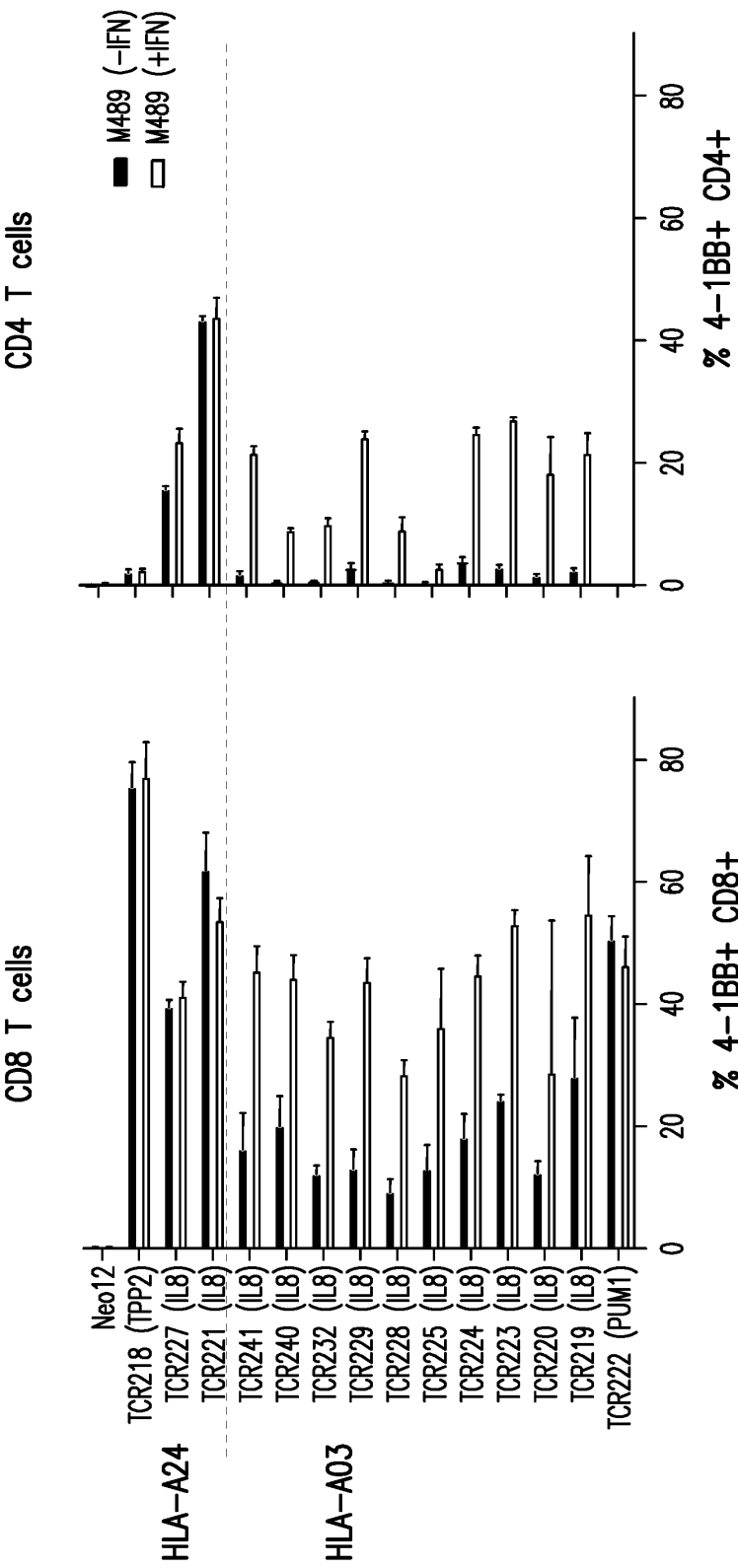


FIG. 48

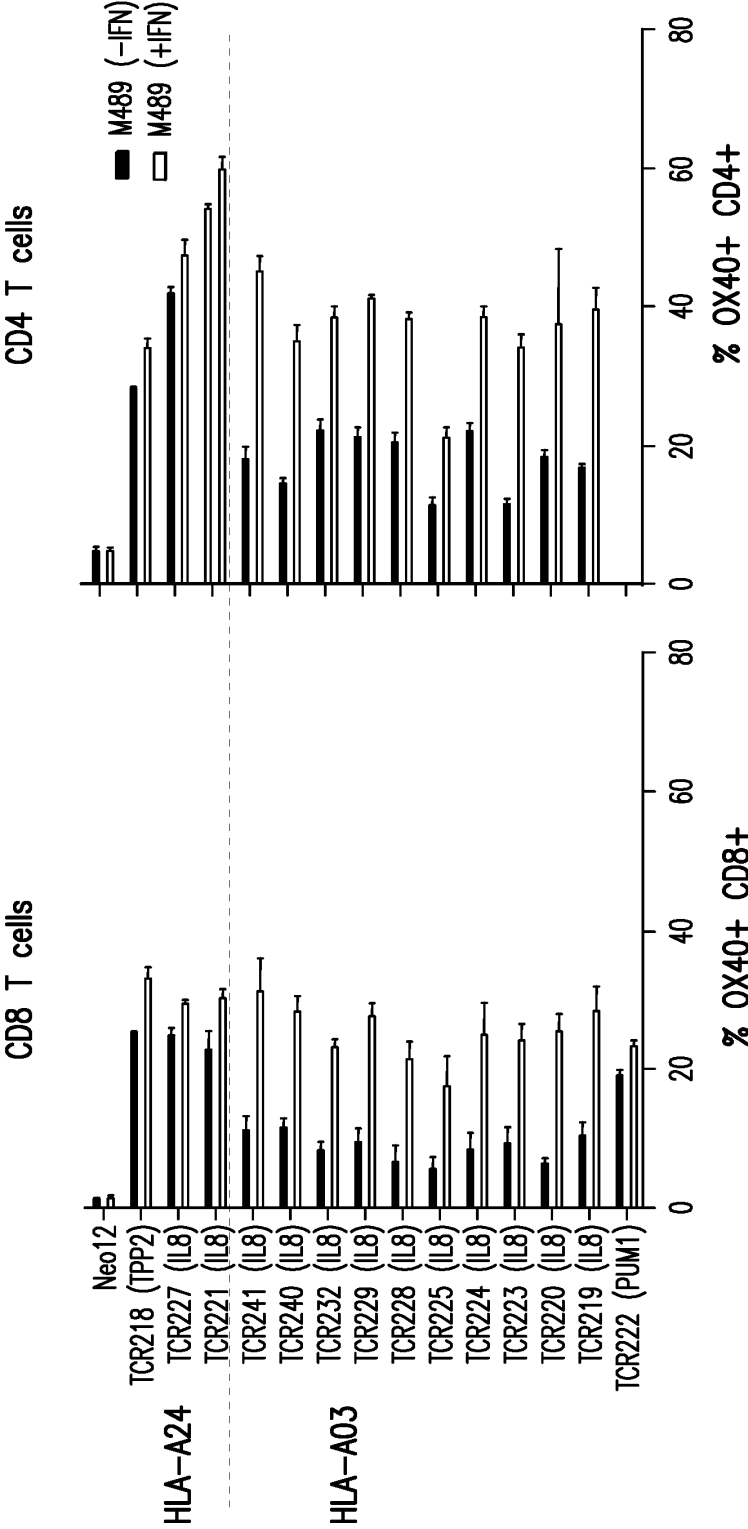


FIG. 49

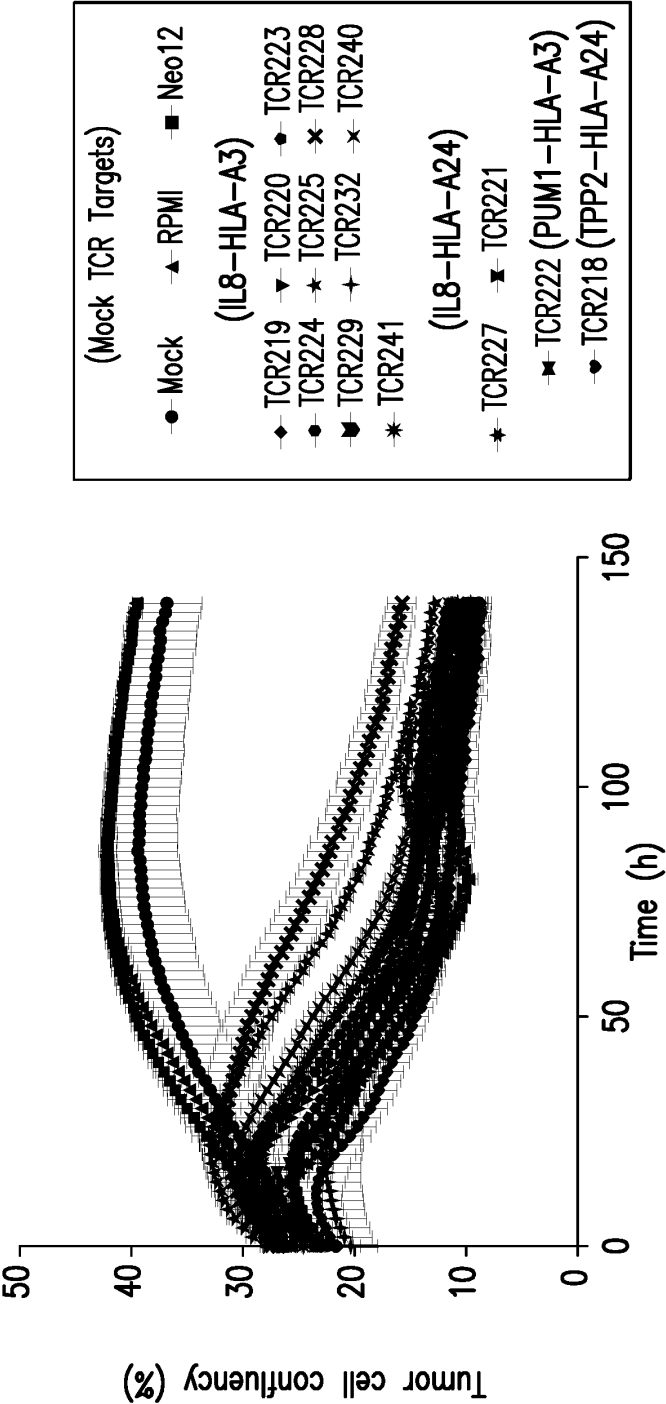


FIG. 50

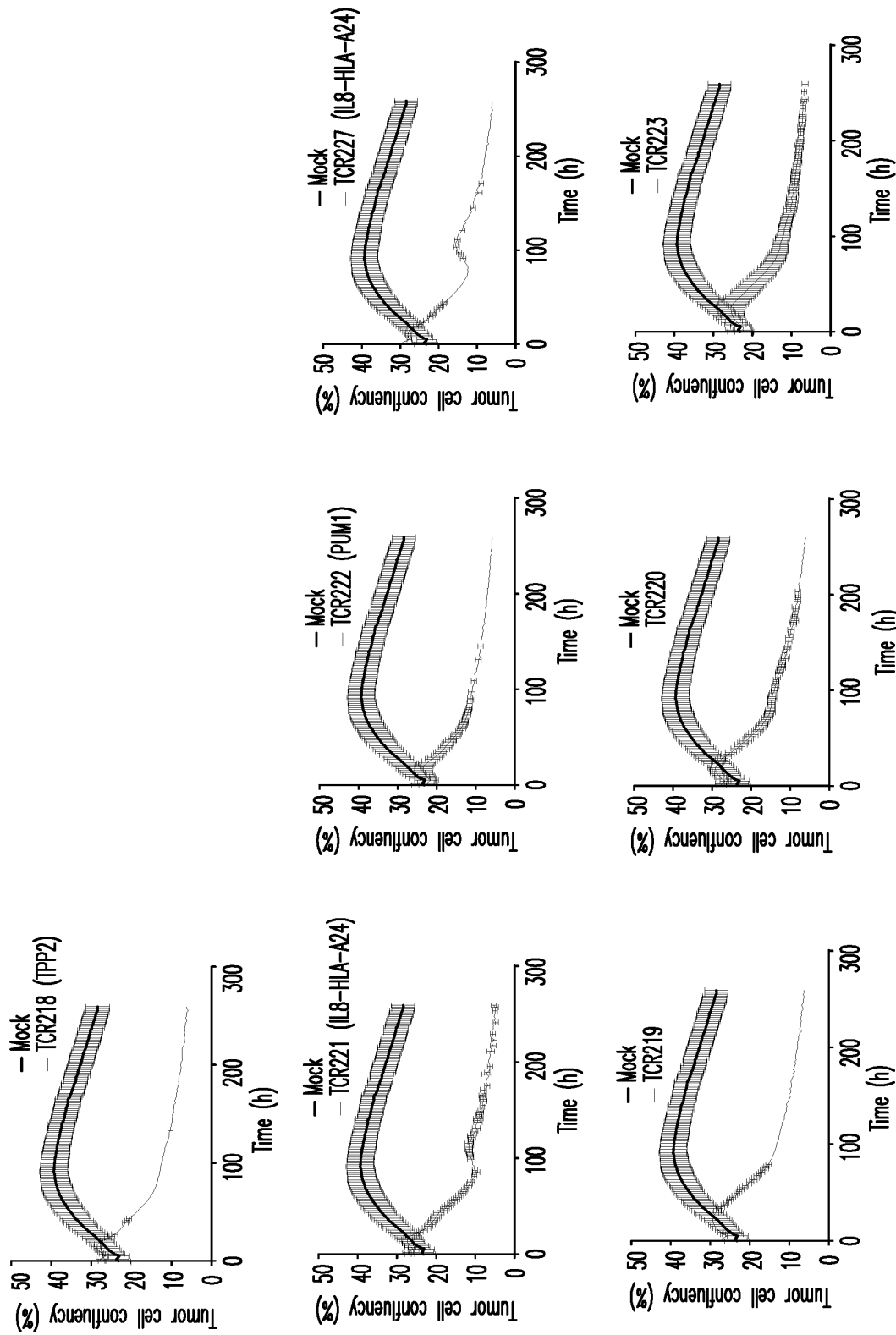


FIG. 51A

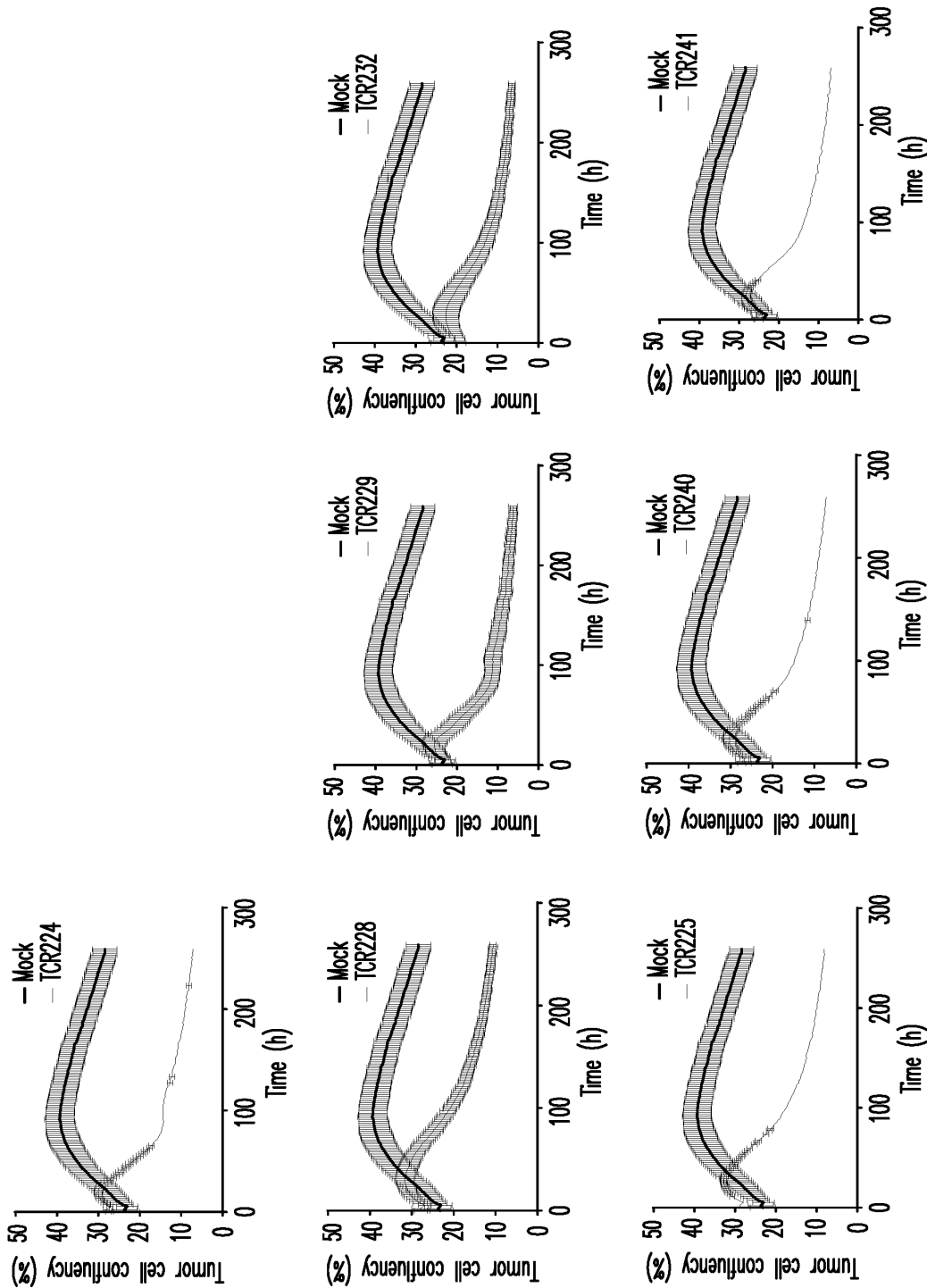


FIG. 51B

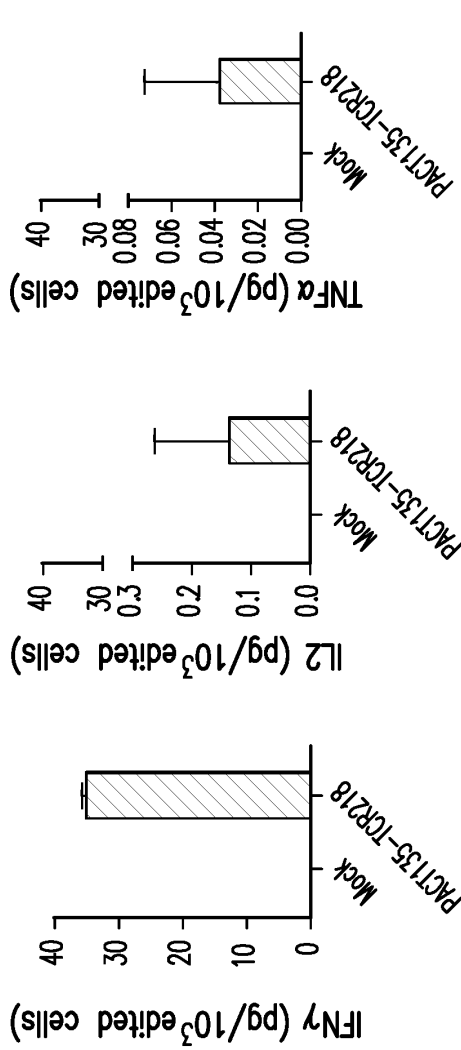


FIG. 52

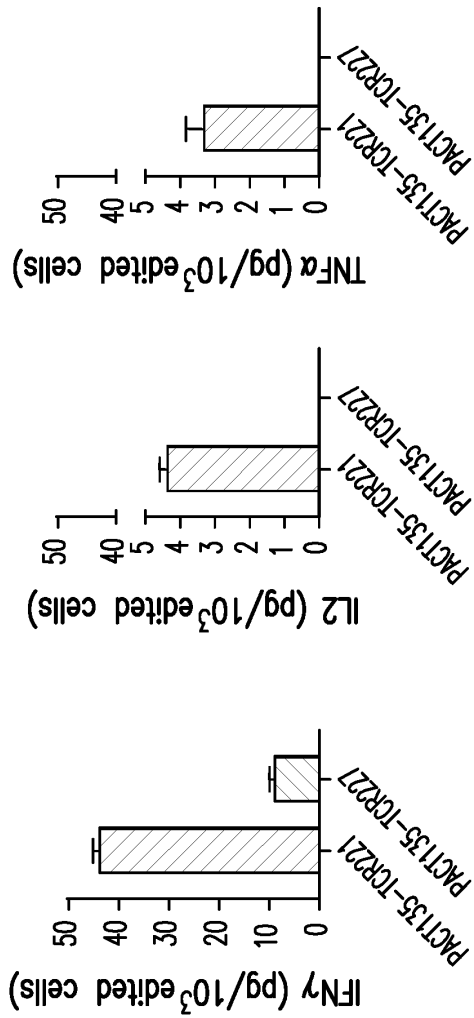


FIG. 53

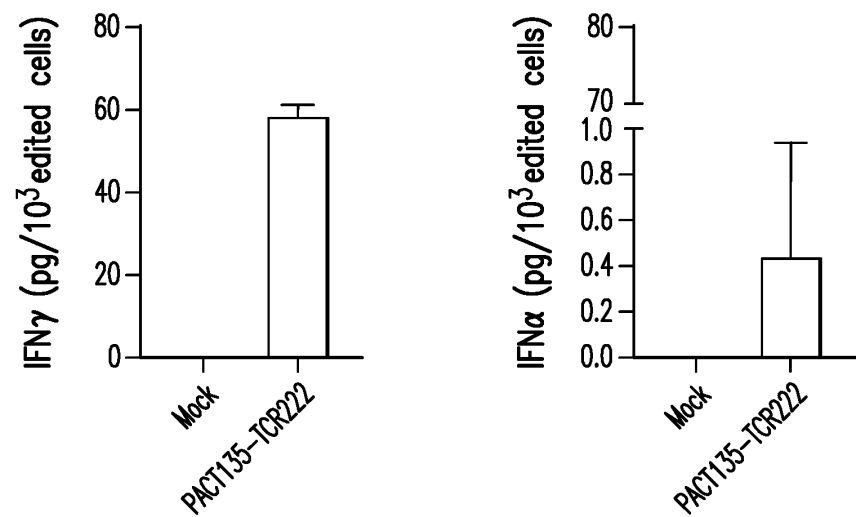


FIG. 54

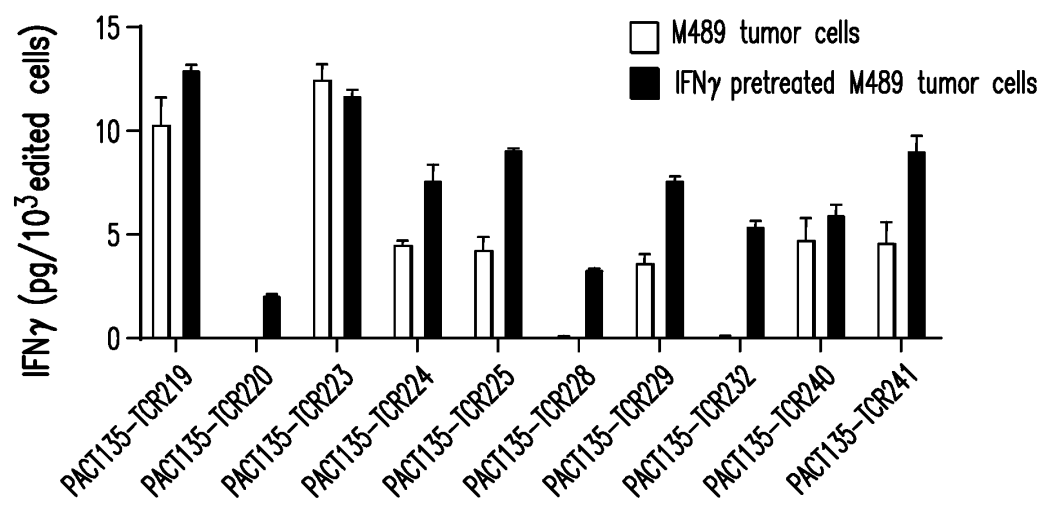


FIG. 55

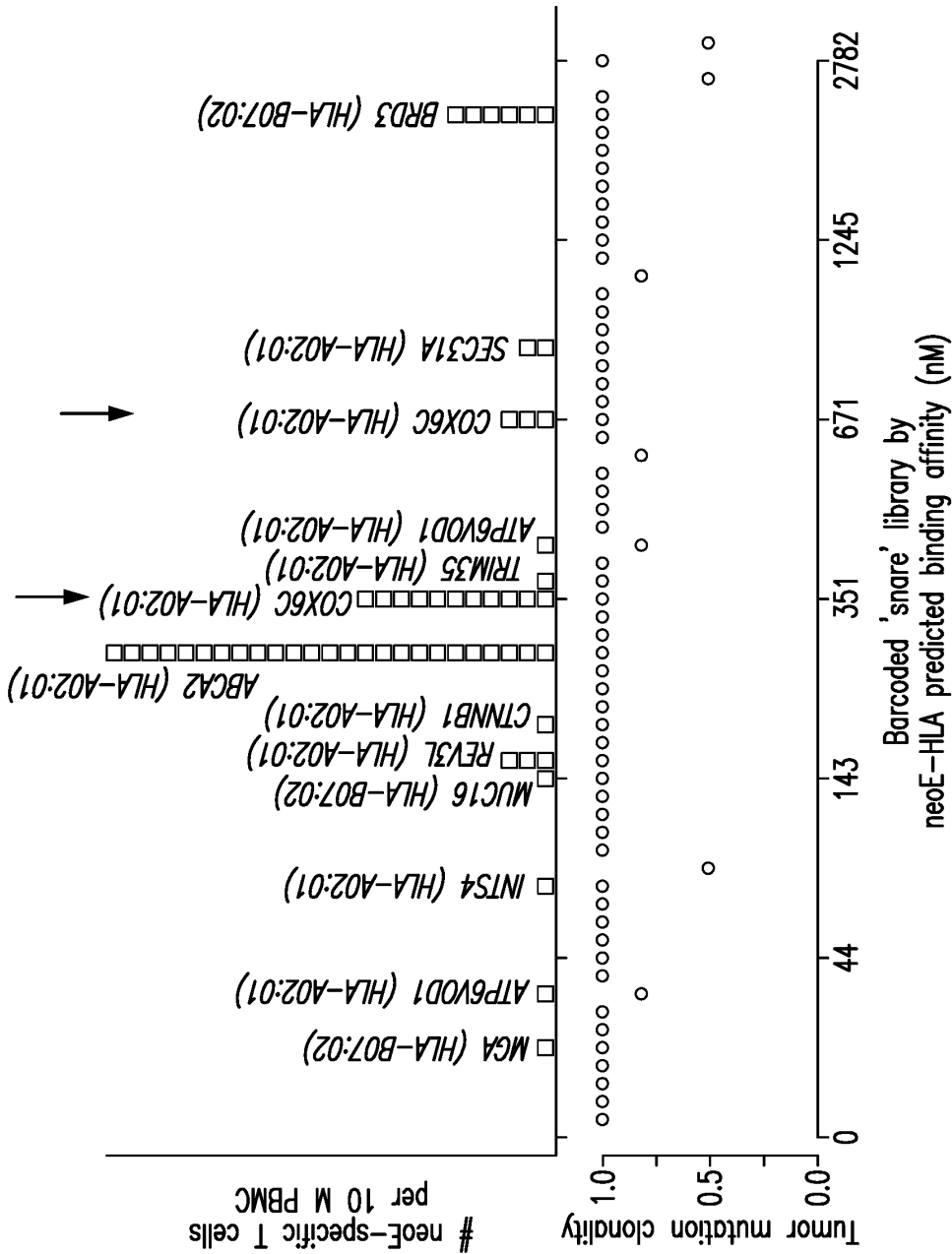


FIG. 56

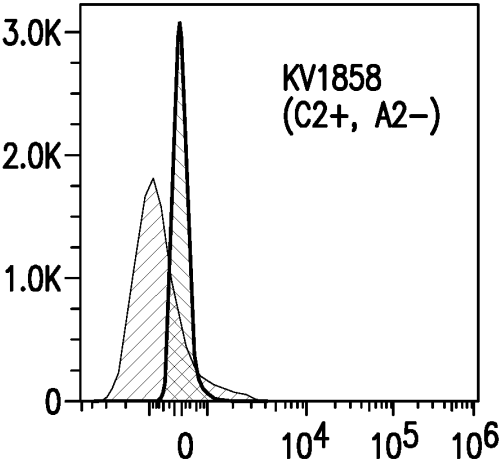


FIG.57A

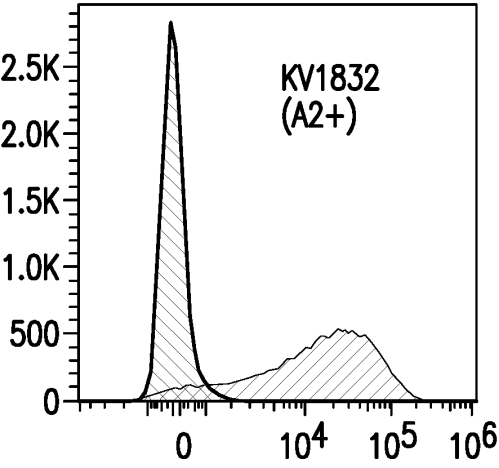


FIG.57B

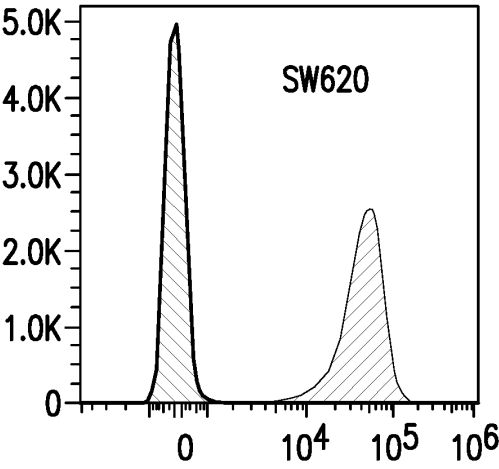


FIG.57C

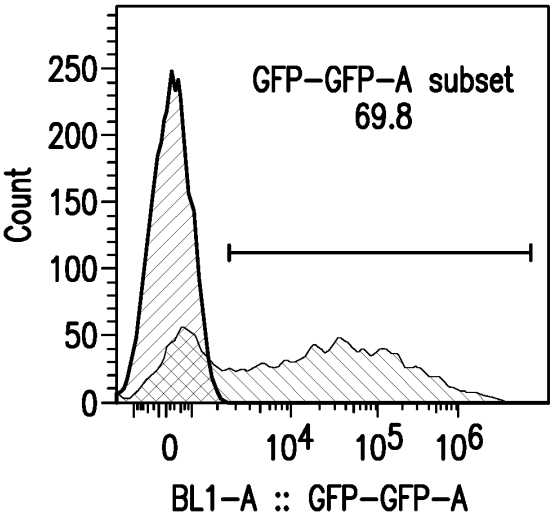


FIG.57D

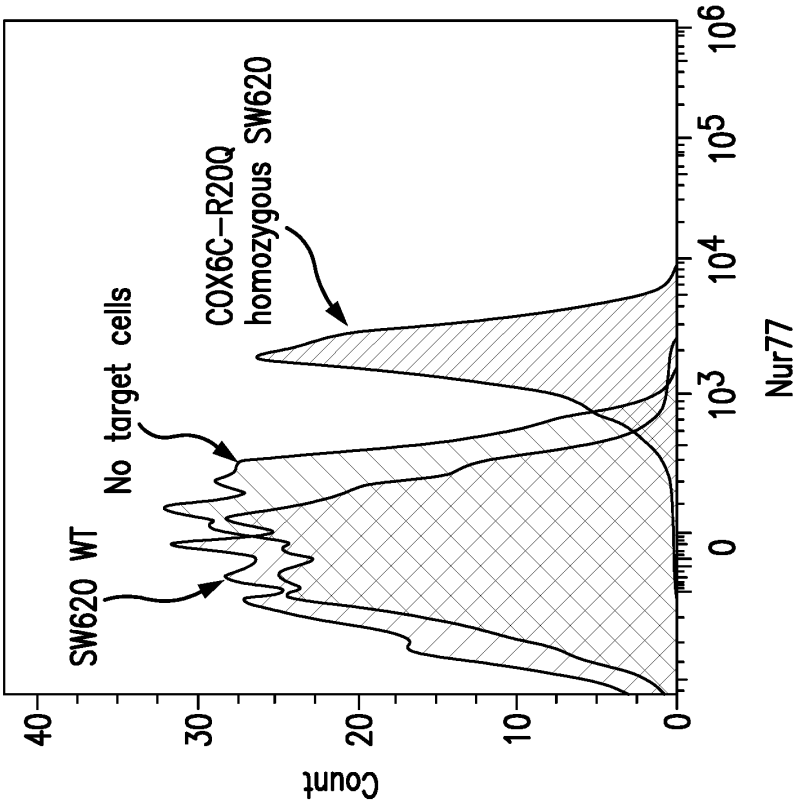


FIG. 58

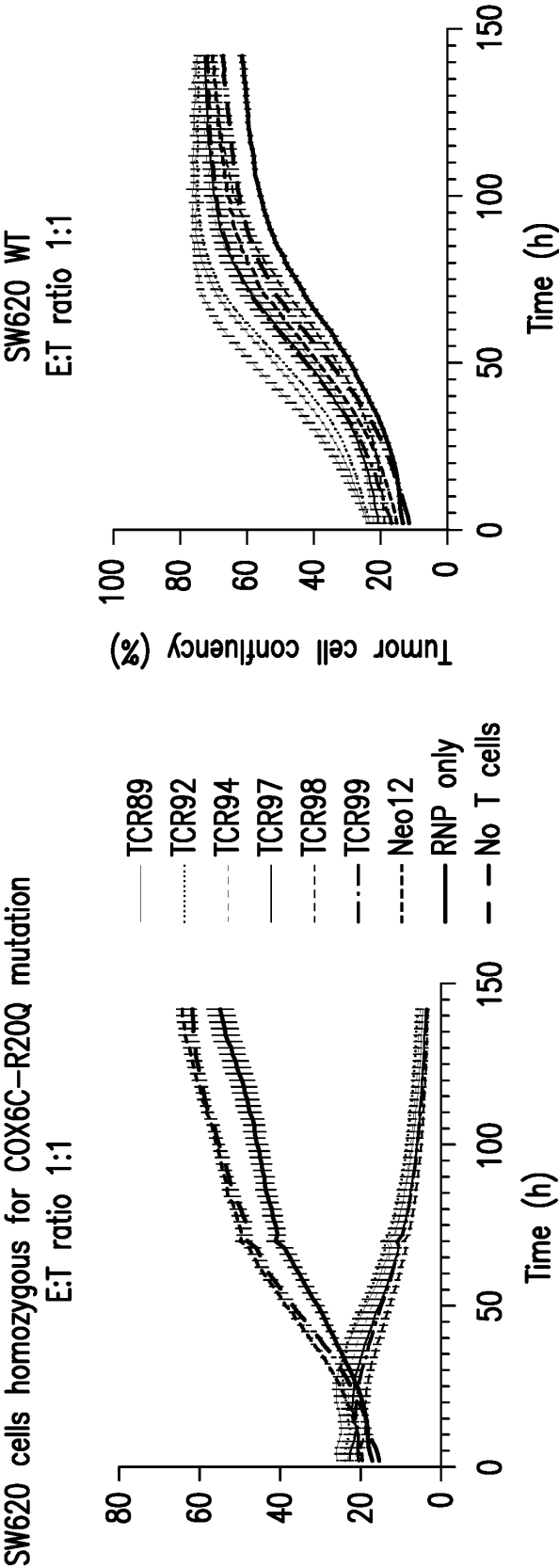


FIG. 59B

FIG. 59A

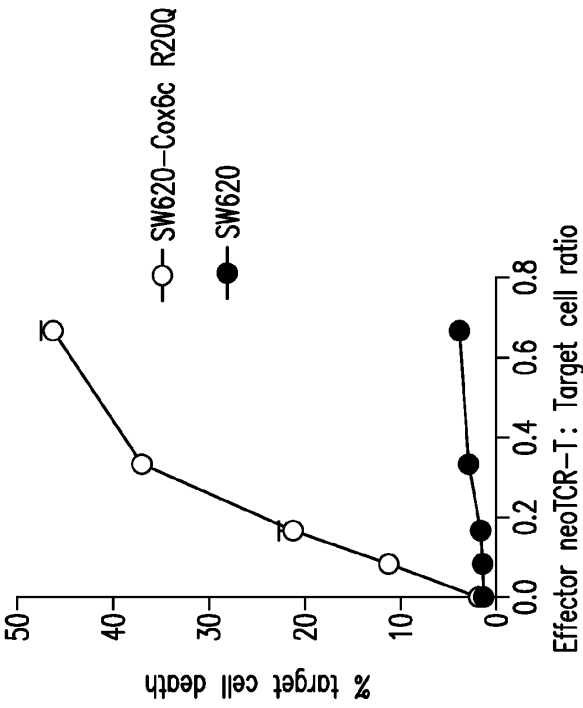


FIG. 60

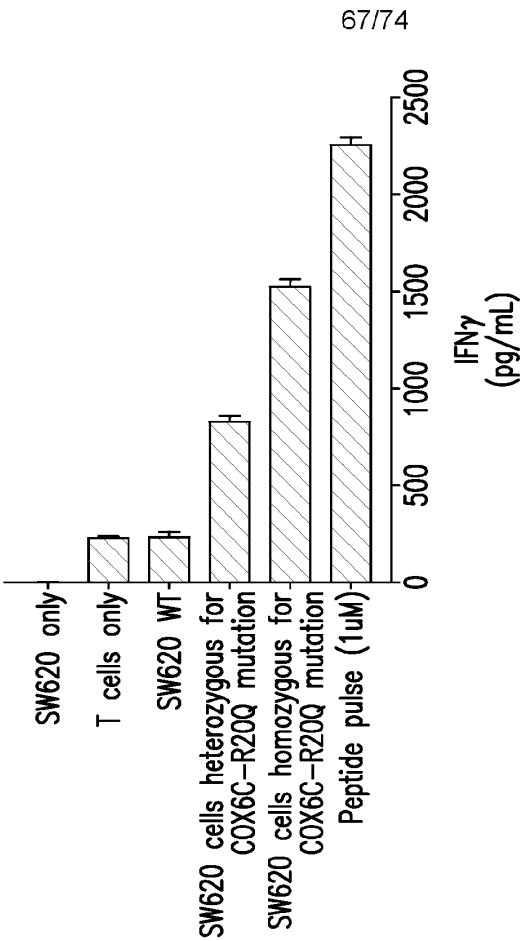


FIG. 61

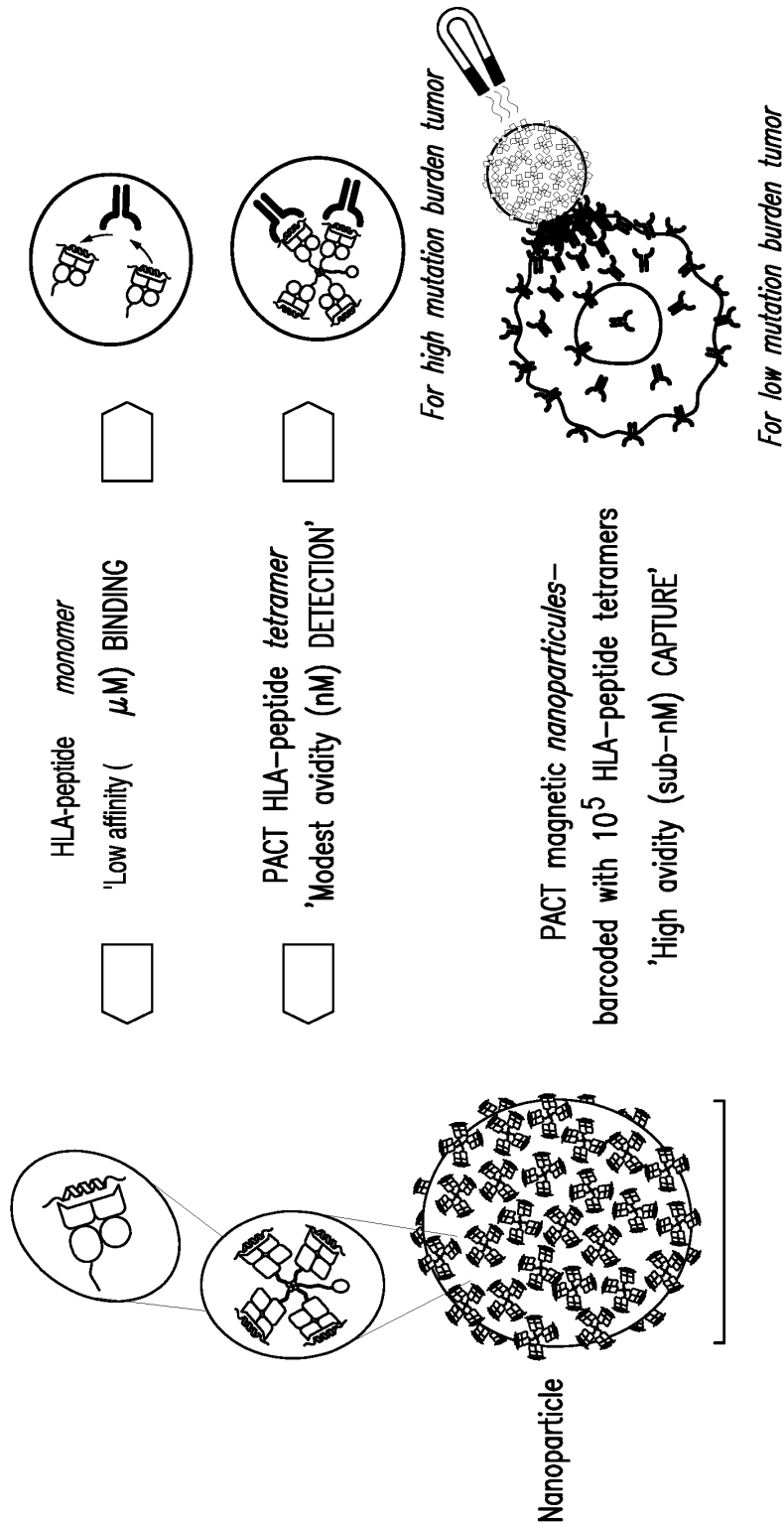


FIG. 62

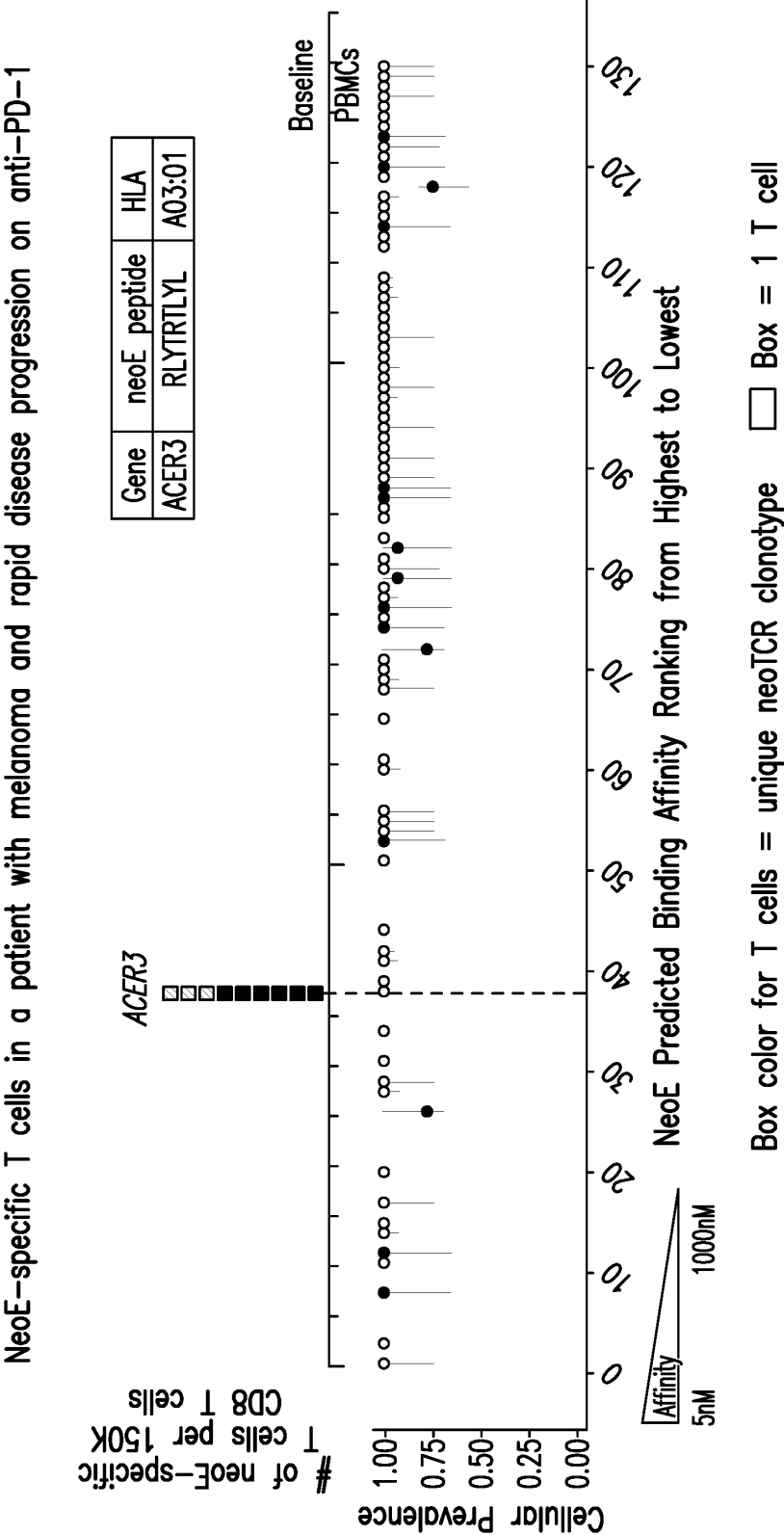
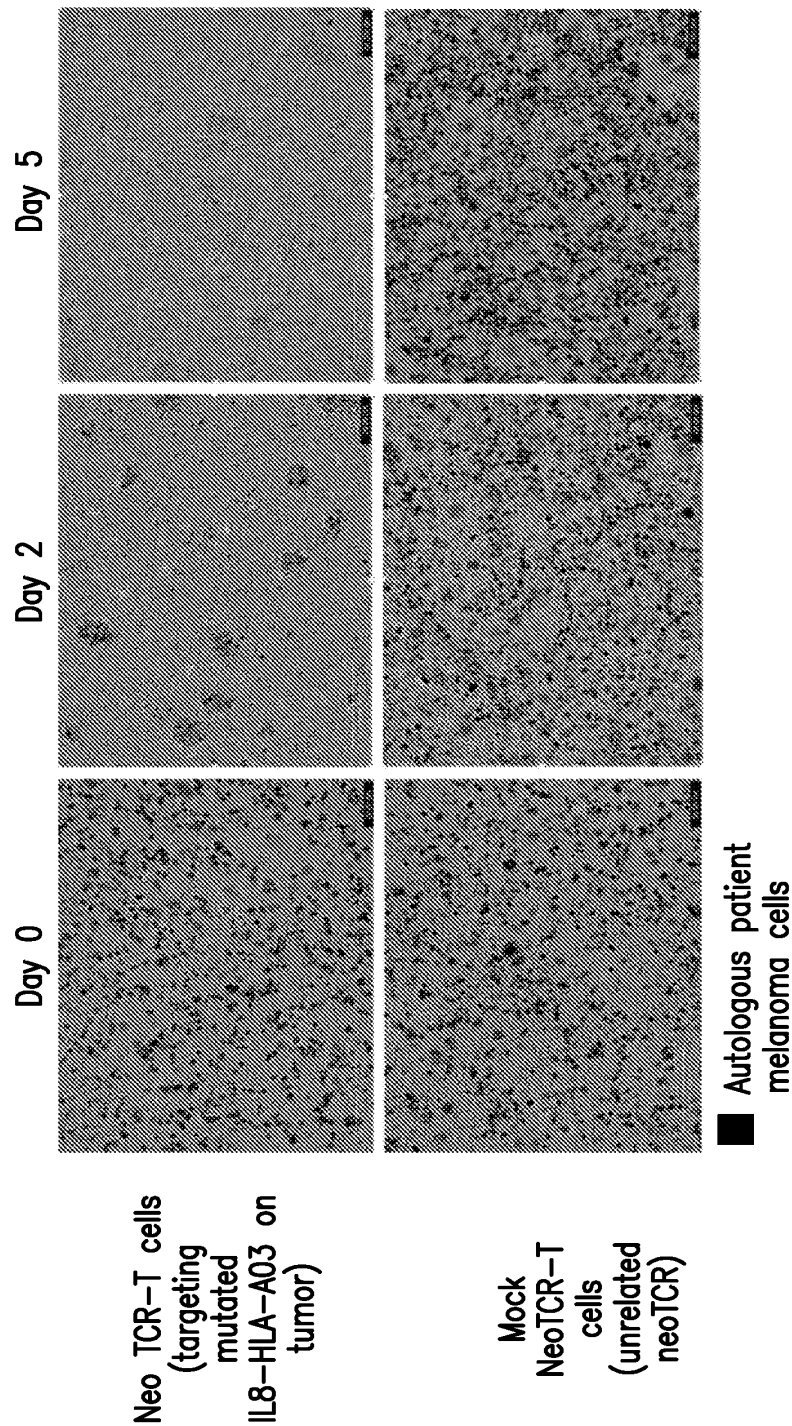


FIG. 63



NeoTCR-T cell: Tumor cell ratio = 1:1 PACT476 (melanoma)-TCR219, in collaboration with PACT

FIG. 64

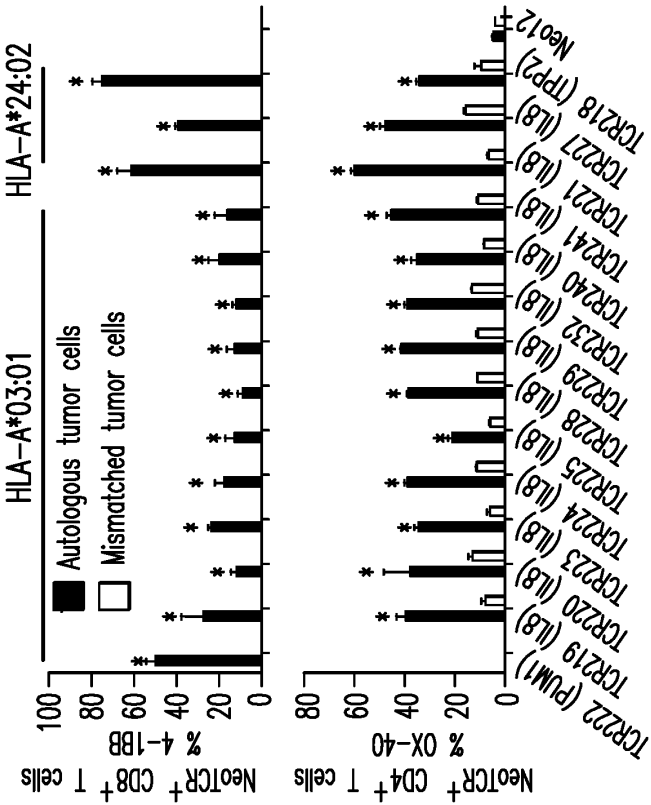


FIG. 65B

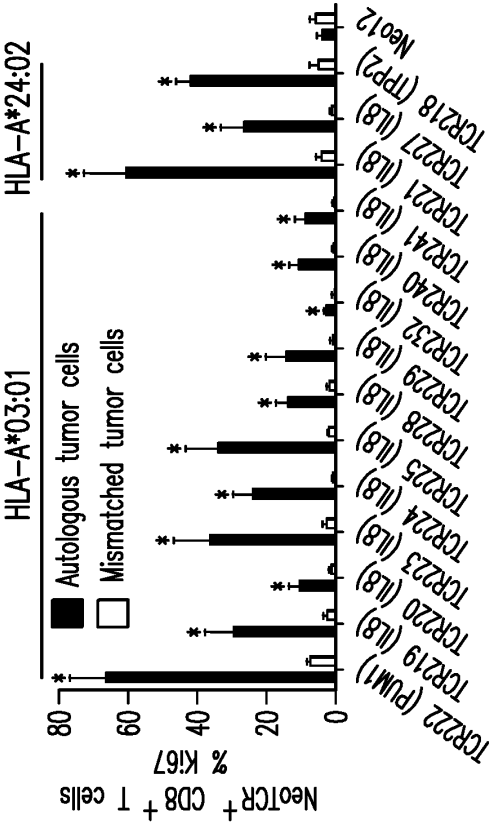


FIG. 65A

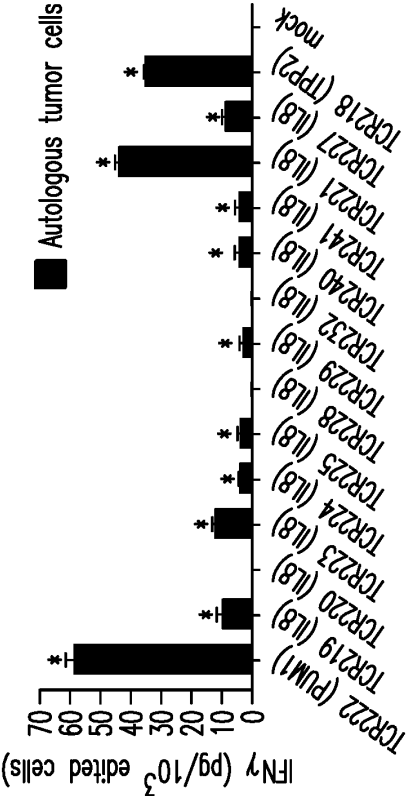


FIG. 65C

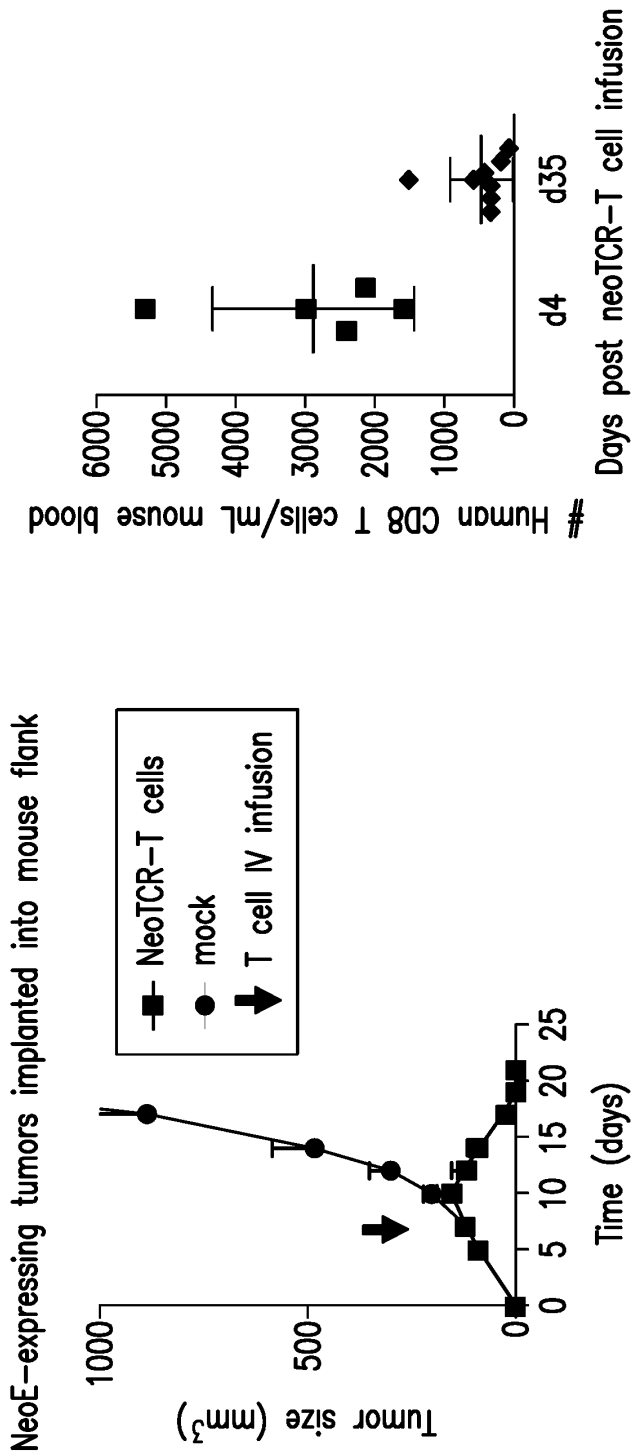


FIG. 66A

FIG. 66B

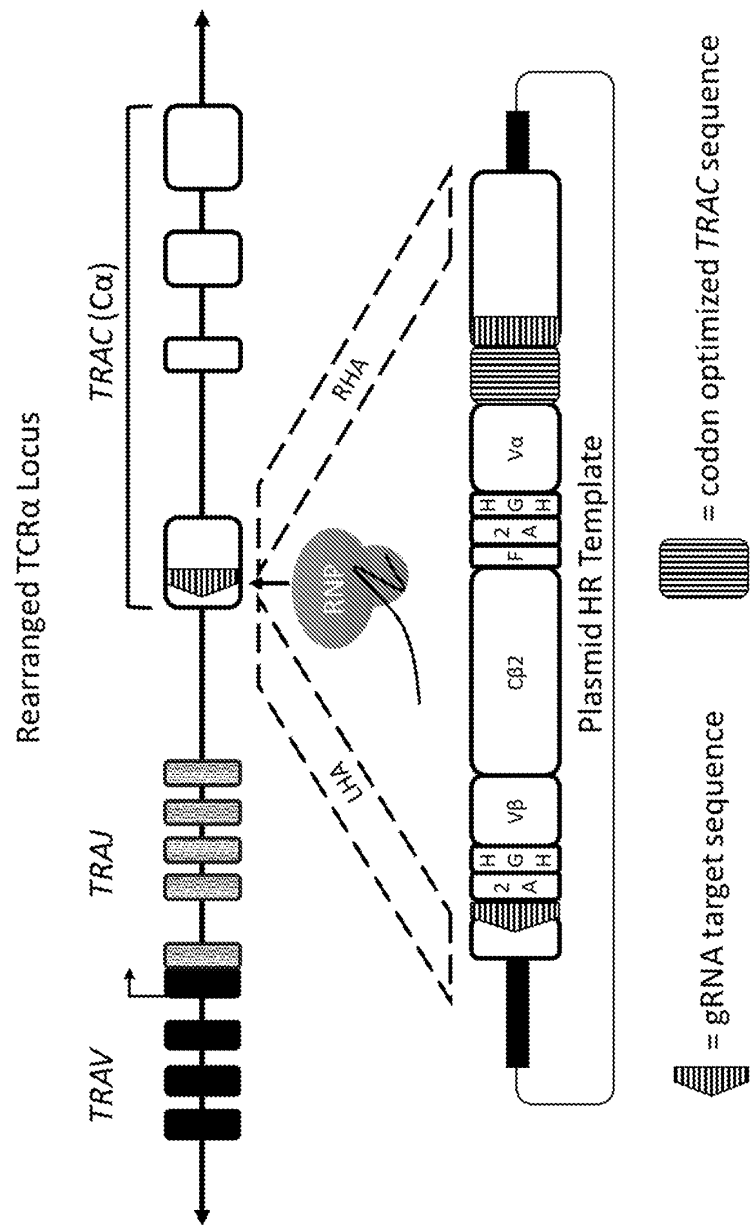


FIG. 67A

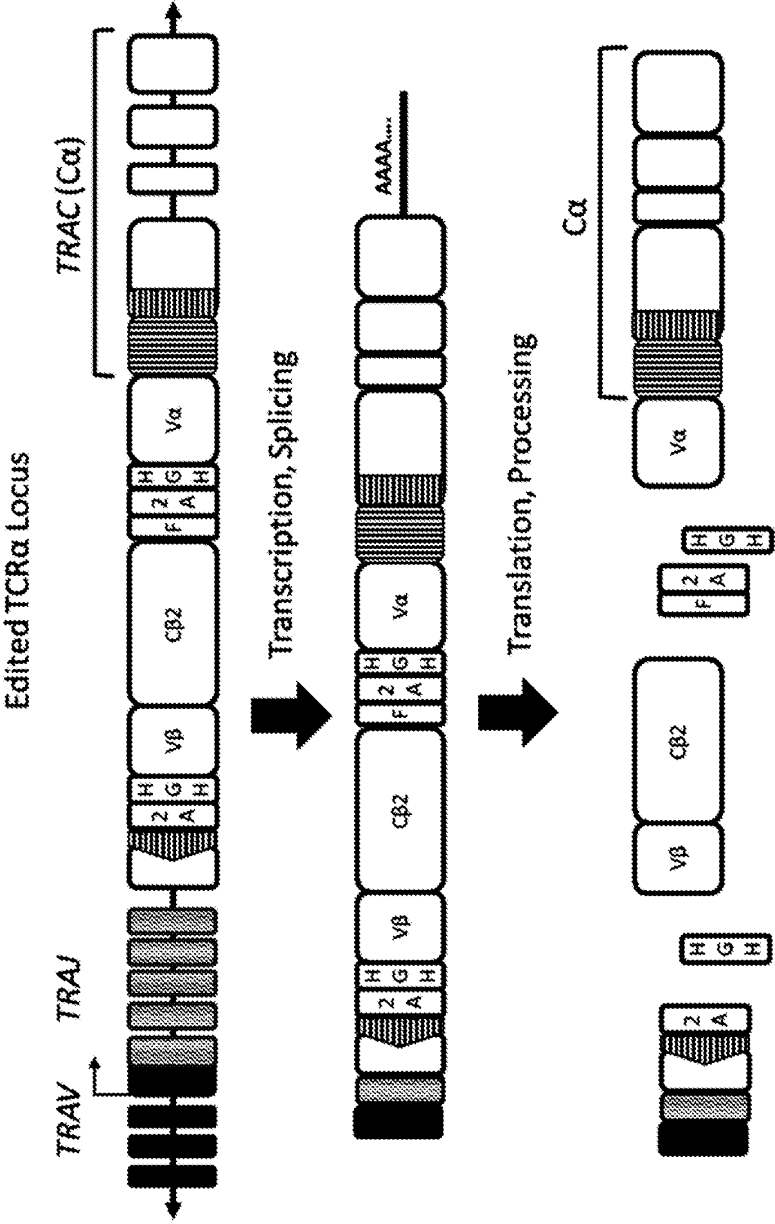


FIG. 67B