

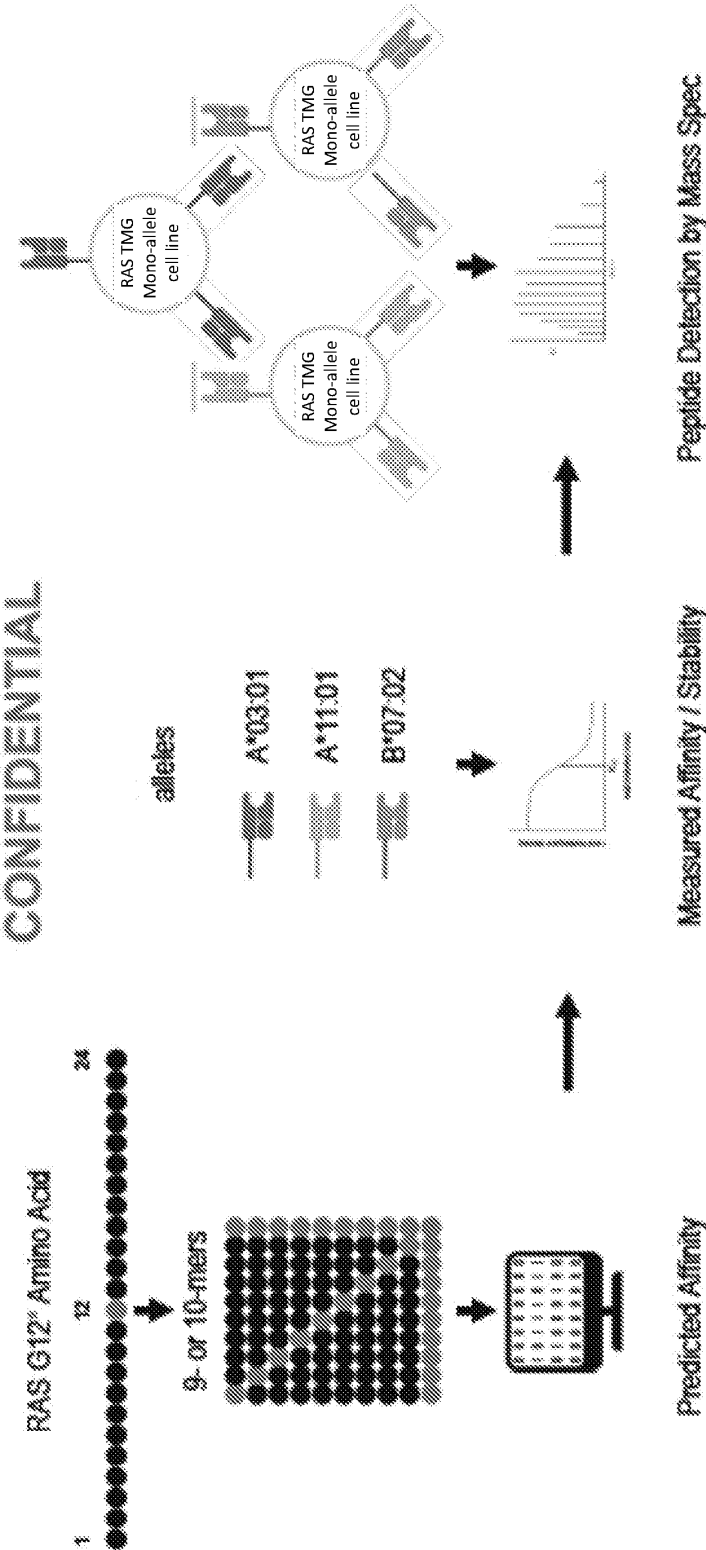


Figure 1

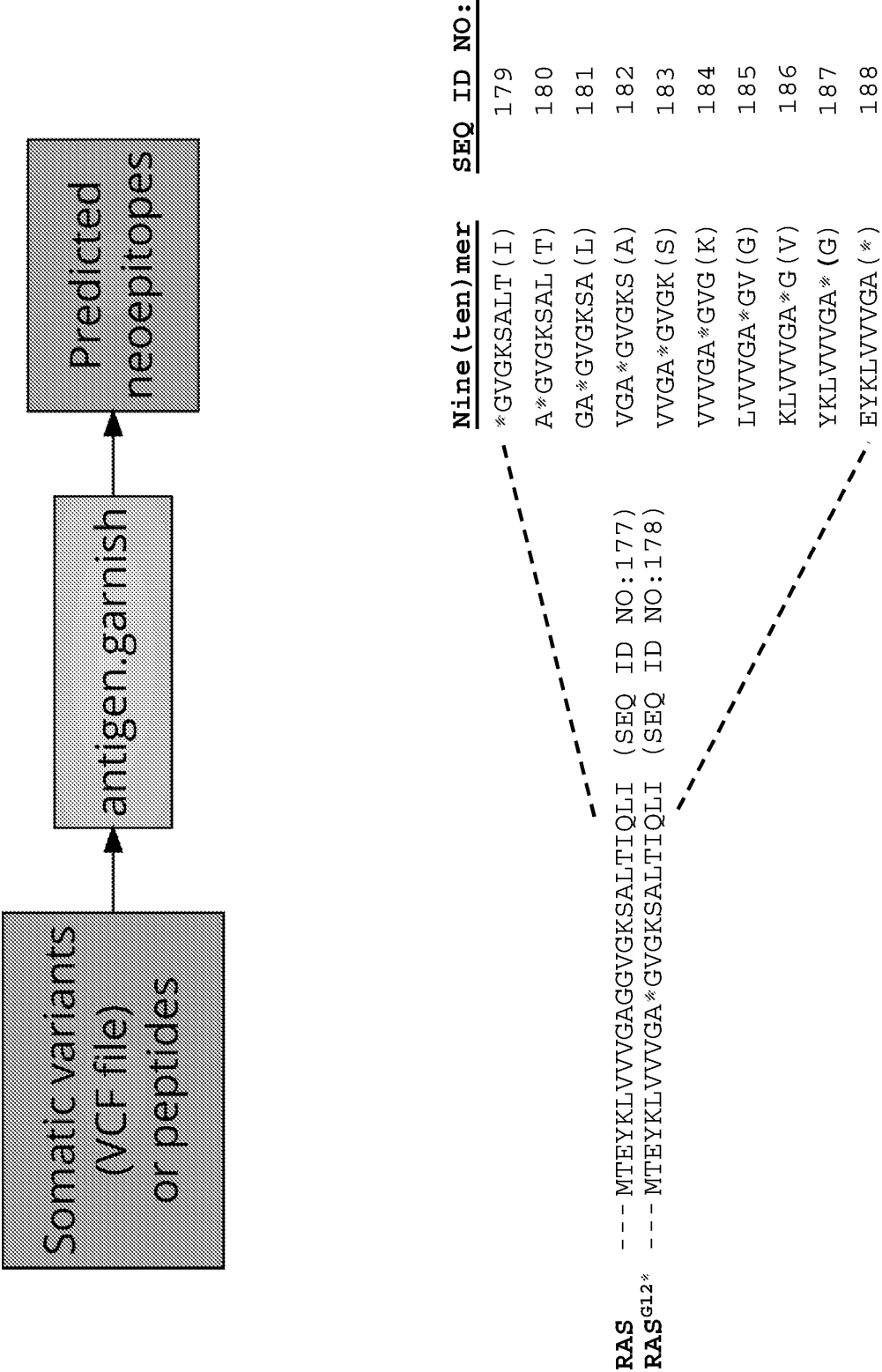


Figure 2

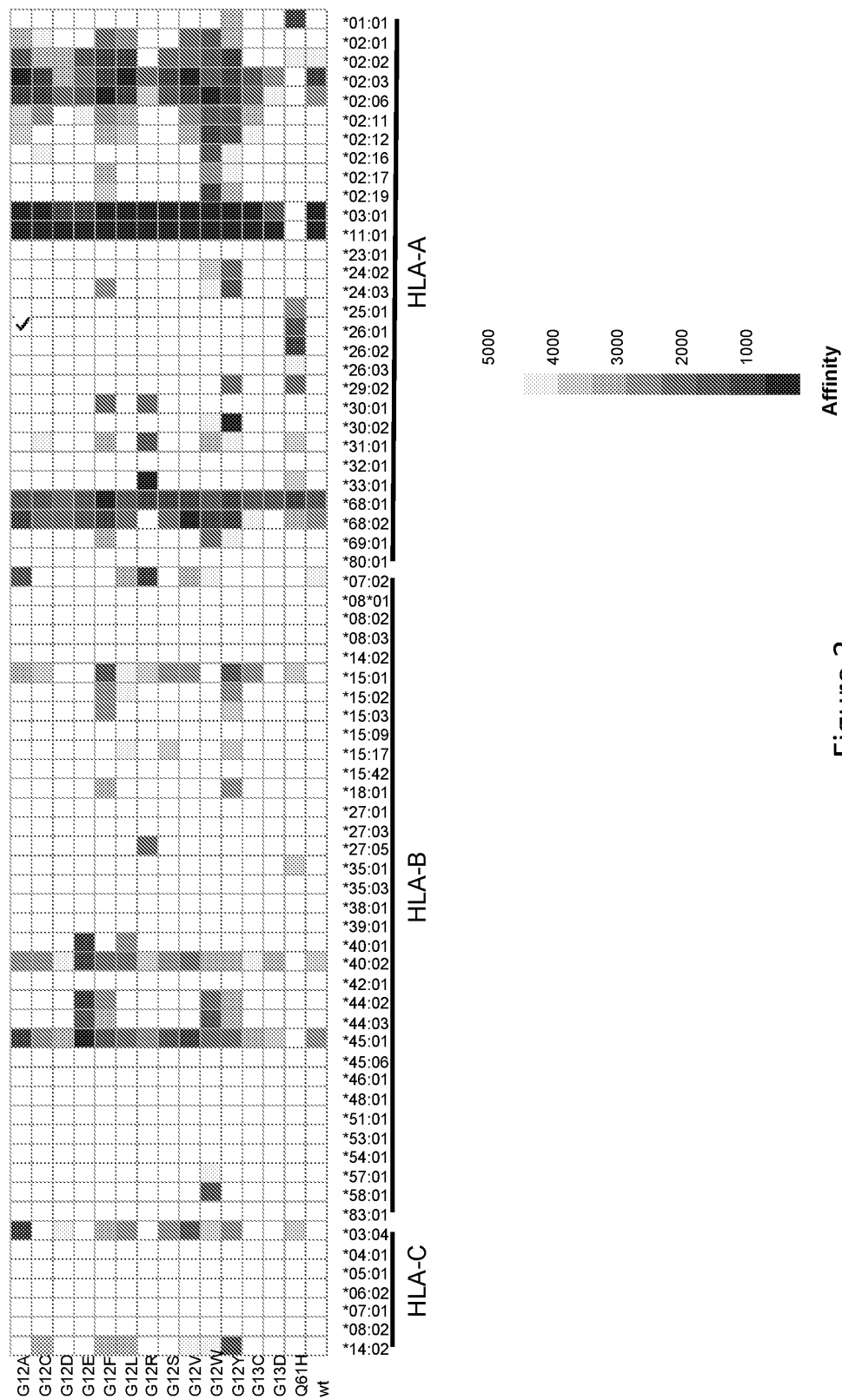


Figure 3

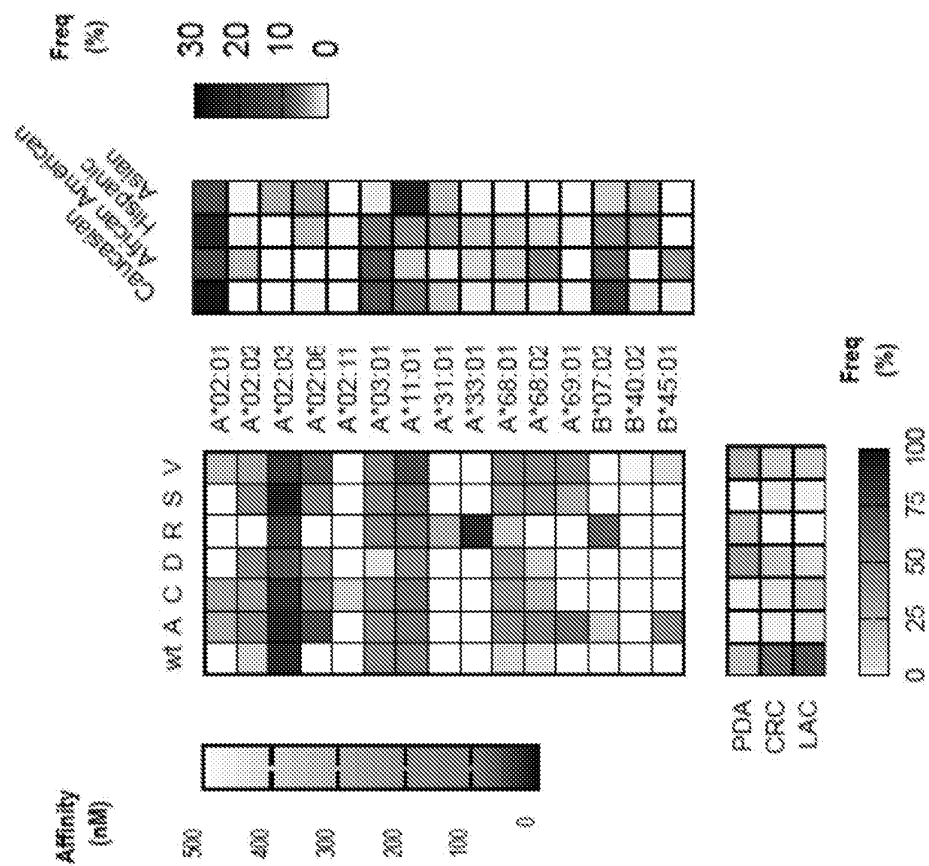
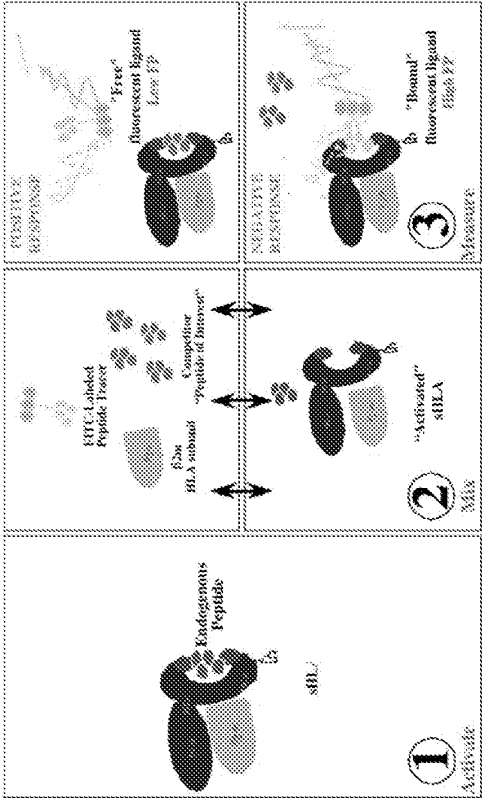


Figure 4A

ID	G12	n-mer	aa	Predicted Affinity (nM)				SEQ ID NO:
				A*02:01	A*03:01	A*11:01	B*07:02	
KL _V _G	wt	10	KLWVGAGGV	1524	---	---	---	SEQ ID NO: 189
KL _V _C	C	10	KLWVGACGV	274	---	---	---	SEQ ID NO:1
KL _V _D	D	10	KLWVGADGV	762	---	---	---	SEQ ID NO:2
KL _V _R	R	10	KLWVGARGV	1573	---	---	---	SEQ ID NO:3
KL _V _V	V	10	KLWVGAVGV	323	---	---	---	SEQ ID NO:4
W _V _G	wt	9	WVGAGGVGK	---	537	111	---	SEQ ID NO: 190
W _V _G	wt	10	WVGAGGVGK	---	152	76	---	SEQ ID NO: 191
W _V _C	C	8	WVGACGVGK	---	248	85	---	SEQ ID NO:5
W _V _C	C	10	WVGACGVGK	---	166	99	---	SEQ ID NO:6
W _V _D	D	9	WVGADGVGK	---	1234	169	---	SEQ ID NO:7
W _V _D	D	10	WVGADGVGK	---	409	156	---	SEQ ID NO:8
W _V _R	R	8	WVGARGVGK	---	223	87	---	SEQ ID NO:9
W _V _R	R	10	WVGARGVGK	---	98	116	---	SEQ ID NO:10
W _V _V	V	9	WVGAVGVGK	---	107	54	---	SEQ ID NO:11
W _V _V	V	10	WVGAVGVGK	---	120	63	---	SEQ ID NO:12
GA _G _G	wt	10	GACGVGKSAL	---	---	---	2769	SEQ ID NO: 192
GA _G _C	C	10	GACGVGKSAL	---	---	---	4240	SEQ ID NO:13
GA _G _D	D	10	GACGVGKSAL	---	---	---	5244	SEQ ID NO:14
GA _G _R	R	10	GACGVGKSAL	---	---	---	70	SEQ ID NO:15
GA _G _V	V	10	GACGVGKSAL	---	---	---	2695	SEQ ID NO:16

Figure 4B

Fluorescence Polarization Assay (competitive binding)



MHC Peptide Sequence	SEQ ID NO:	MHC Allele	log[IC50]	Affinity
KLWVGACGV	1	A*02:01	4.458	Medium
KLWVGADGV	2	A*02:01	4.291	Medium
KLWVGARGV	3	A*02:01	4.316	Medium
KLWVGAVGV	4	A*02:01	3.47	High
WVGACGVGK	6	A*03:01	3.898	Medium
WVGADGVGK	8	A*03:01	4.678	Medium
WVGARGVGK	10	A*03:01	3.51	High
WVGAVGVGK	12	A*03:01	3.62	High
WVGACGVGK	6	A*11:01	2.729	High
WVGADGVGK	8	A*11:01	2.839	High
WVGARGVGK	10	A*11:01	2.753	High
WVGAVGVGK	12	A*11:01	2.382	High
GARGVGKSAL	15	B*07:02	1.648	High

Log[IC50]	Affinity
<3.7	High
3.7-4.7	Medium
4.7-5.5	Low
5.5-6	Very Low
>6	None

Figure 5

Figure 6A

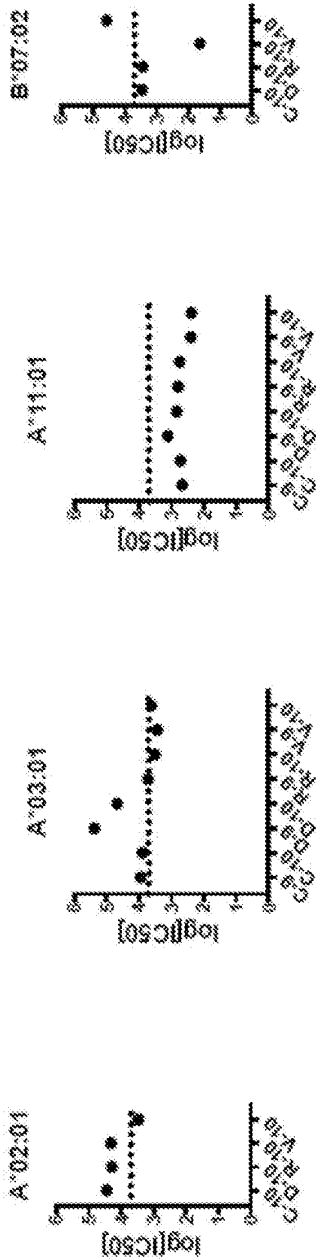


Figure 6B

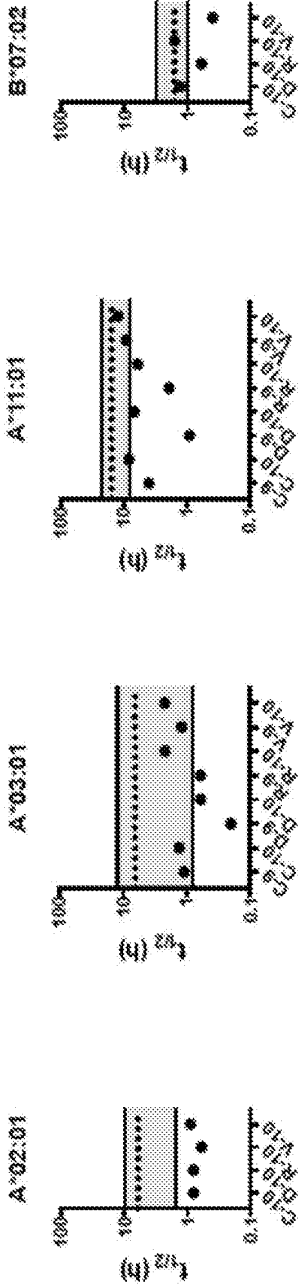


Figure 7A

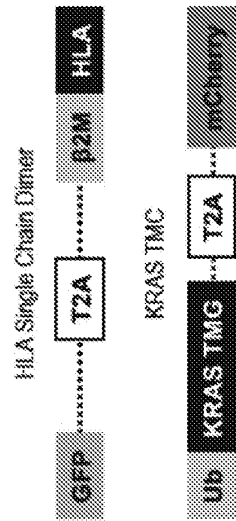


Figure 7B

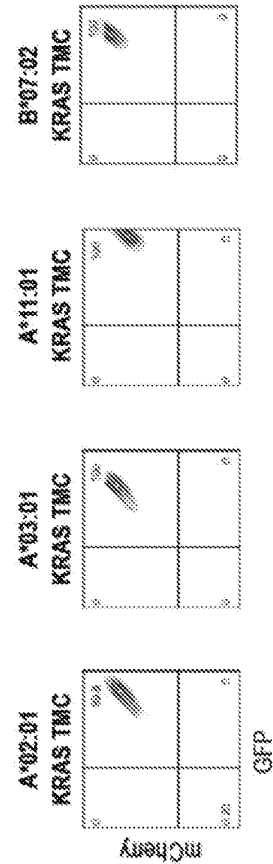


Figure 7C

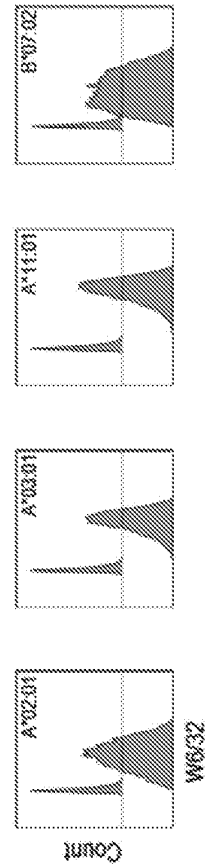
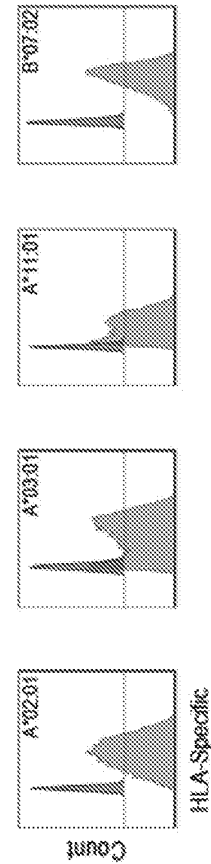


Figure 7D



RAS	
ID	aa
wt	MTEYKLVVWGAGGVGKSAITLIQI
G12A	MTEYKLVVWGAAGVGKSAITLIQI
G12C	MTEYKLVVWGACGVGKSAITLIQI
G12D	MTEYKLVVWGADGVGKSAITLIQI
G12R	MTEYKLVVWGARGVGKSAITLIQI
G12S	MTEYKLVVWGASGVGKSAITLIQI
G12V	MTEYKLVVWGAVGVGKSAITLIQI
Viral Controls	
ID	aa
CMV pp65 - NLV (A*02:01)	GILARNLVPMVATVQGQNLK
Influenza A NP - ILR (A*03:01)	ARSALILRGSAVHKSLPAC
EBV EBNA4 - IVT (A*11:01)	KKCRAINVTDTSVKAIEEEH
CMV pp65 - TPR (B*07:02)	TTERTPTPRVTGGGAMAGAST

SEQ ID NO:

SEQ ID NO: 193

SEQ ID NO: 194

SEQ ID NO: 195

SEQ ID NO: 196

SEQ ID NO: 197

SEQ ID NO: 198

SEQ ID NO: 199

SEQ ID NO:200

SEQ ID NO:201

SEQ ID NO:202

SEQ ID NO:203

Figure 7E

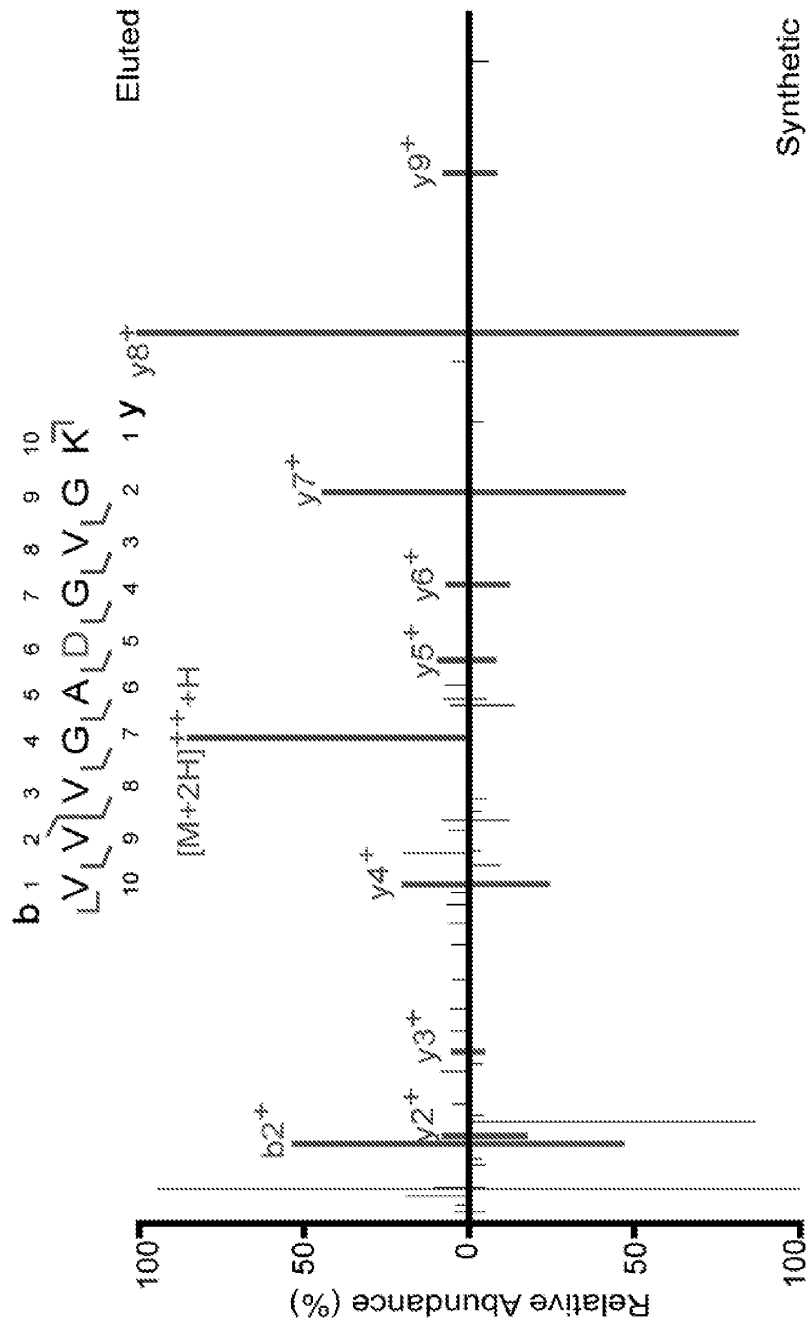


Figure 8A

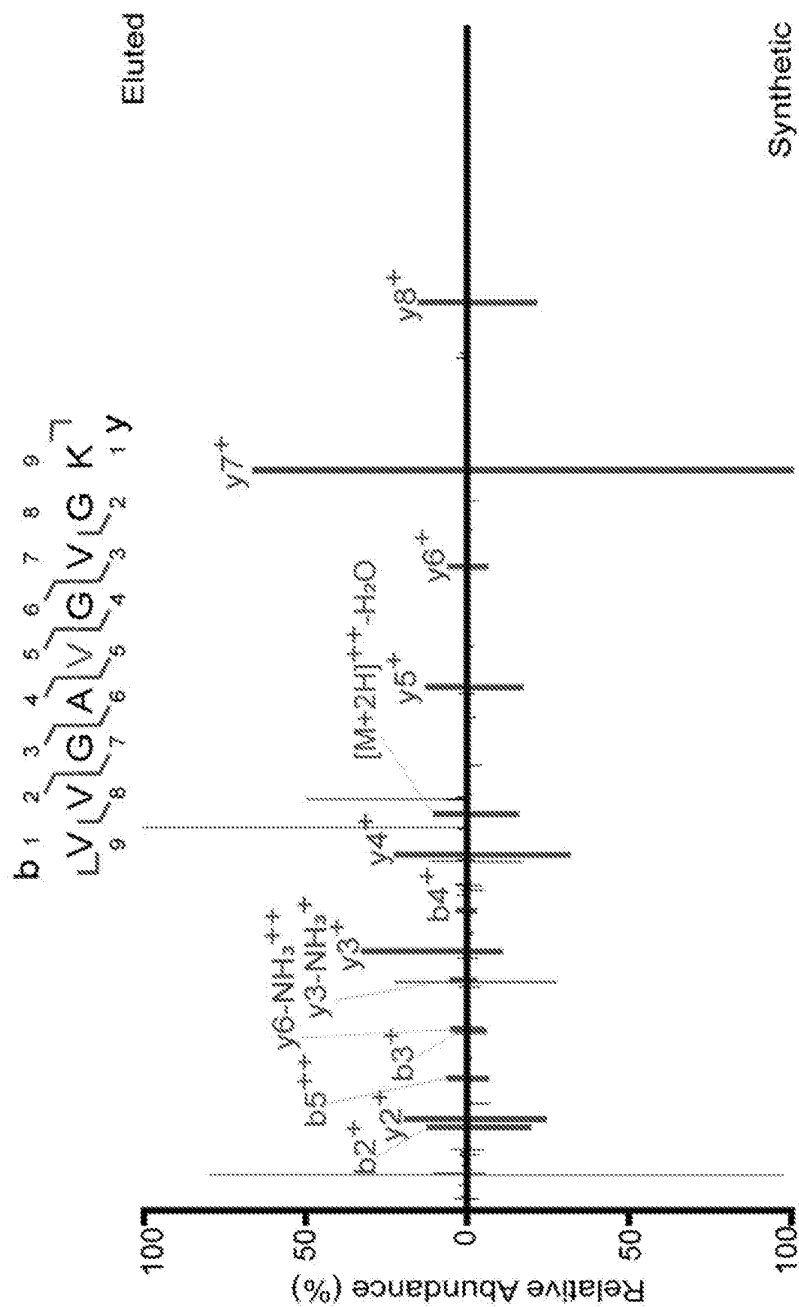


Figure 8B

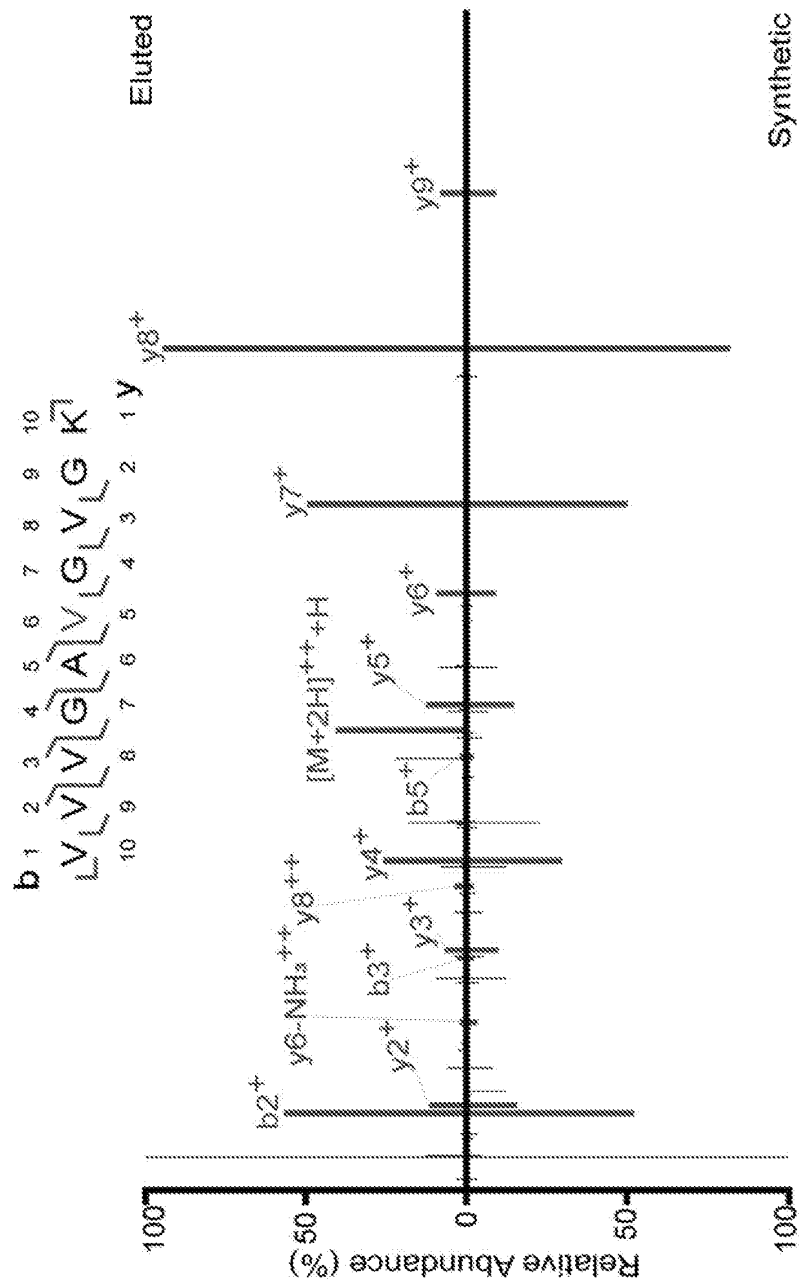


Figure 8C

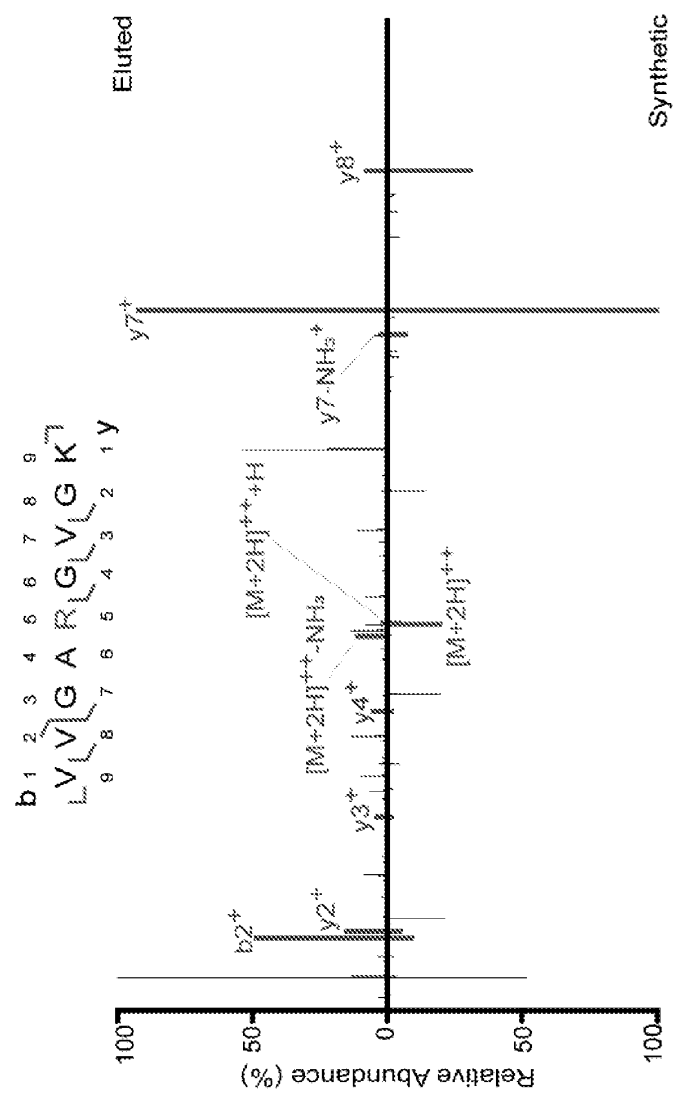


Figure 8D

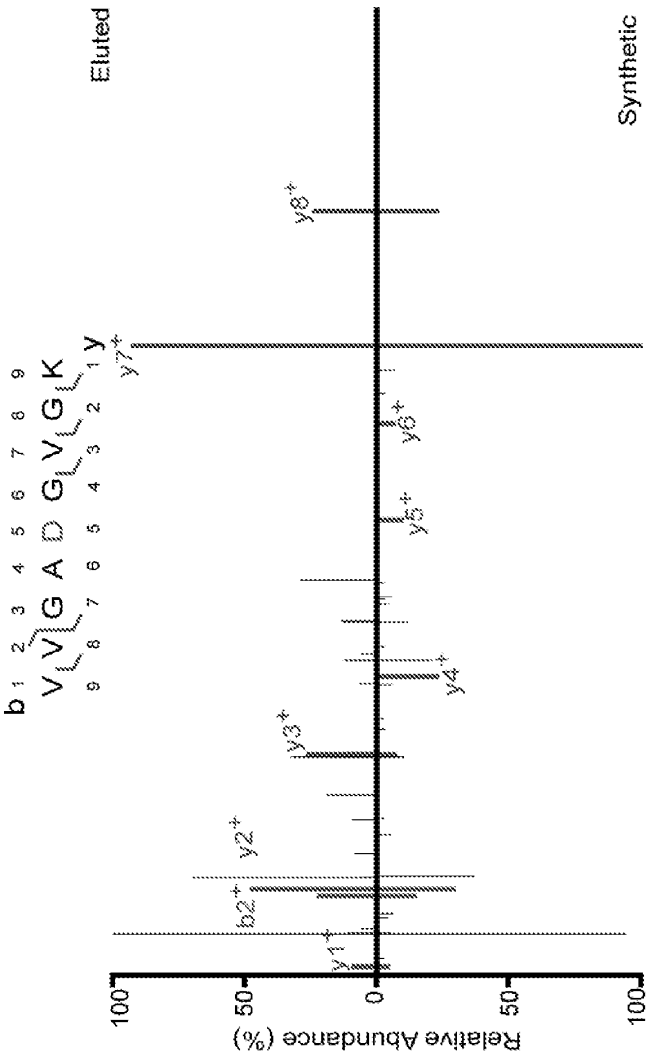


Figure 8E

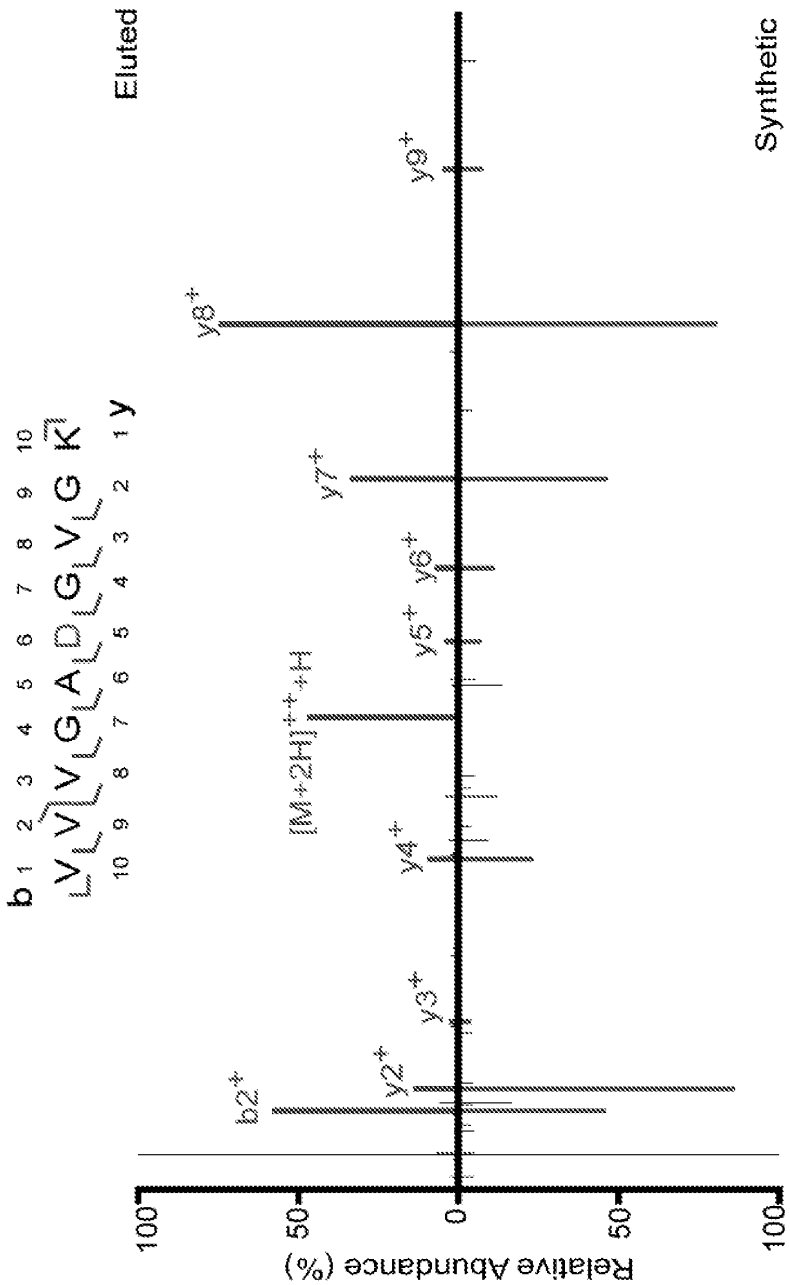


Figure 8F

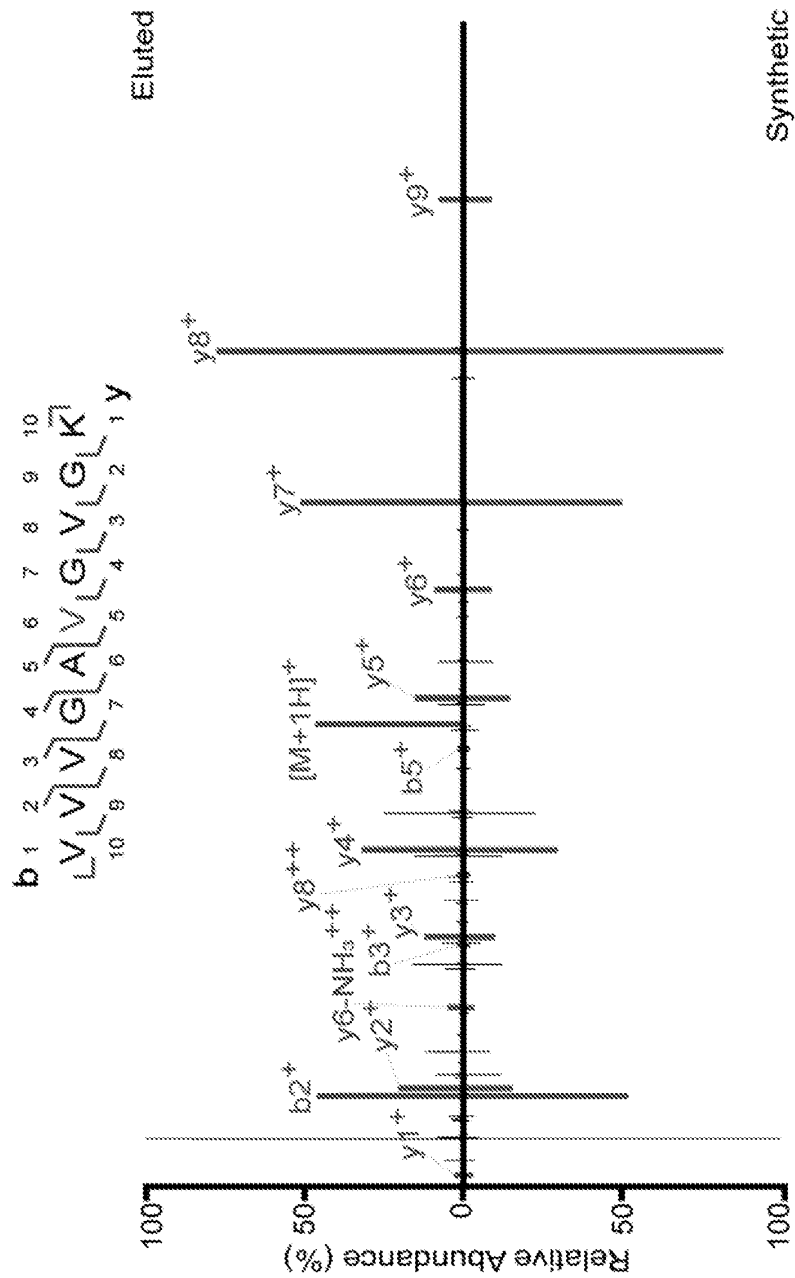


Figure 8G

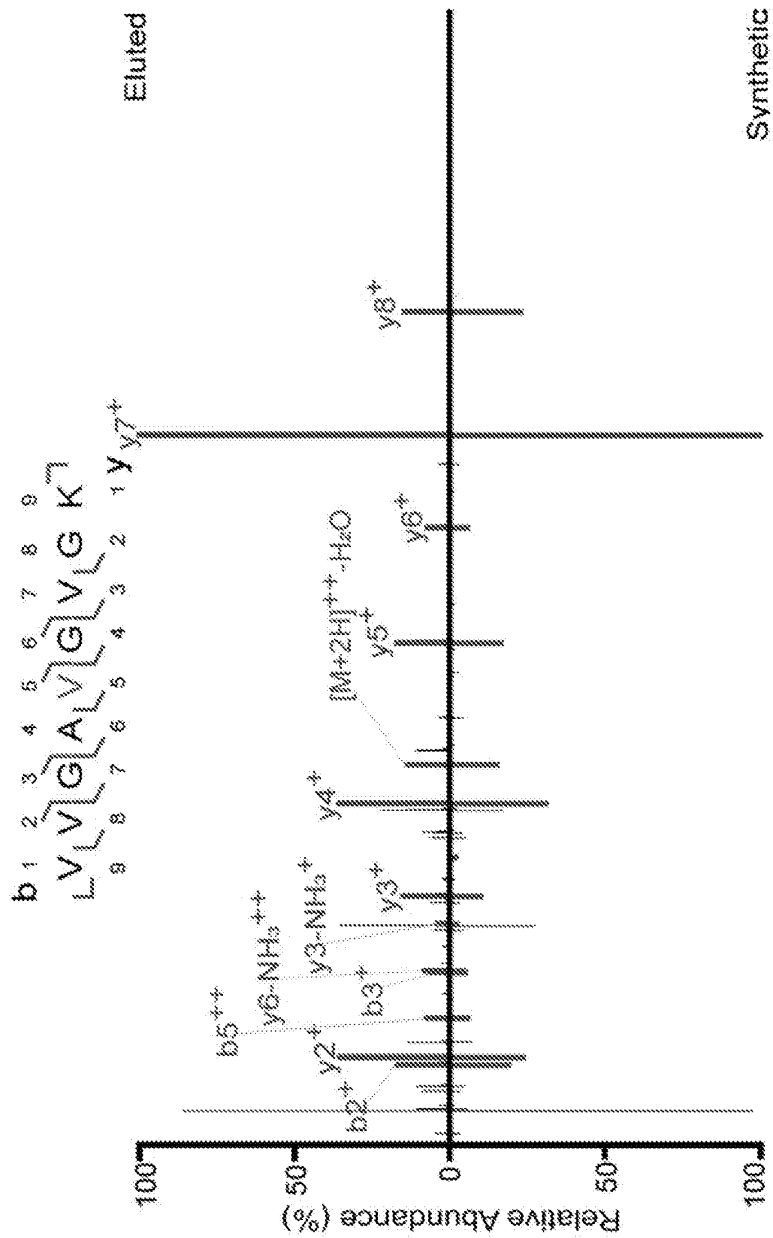


Figure 8H

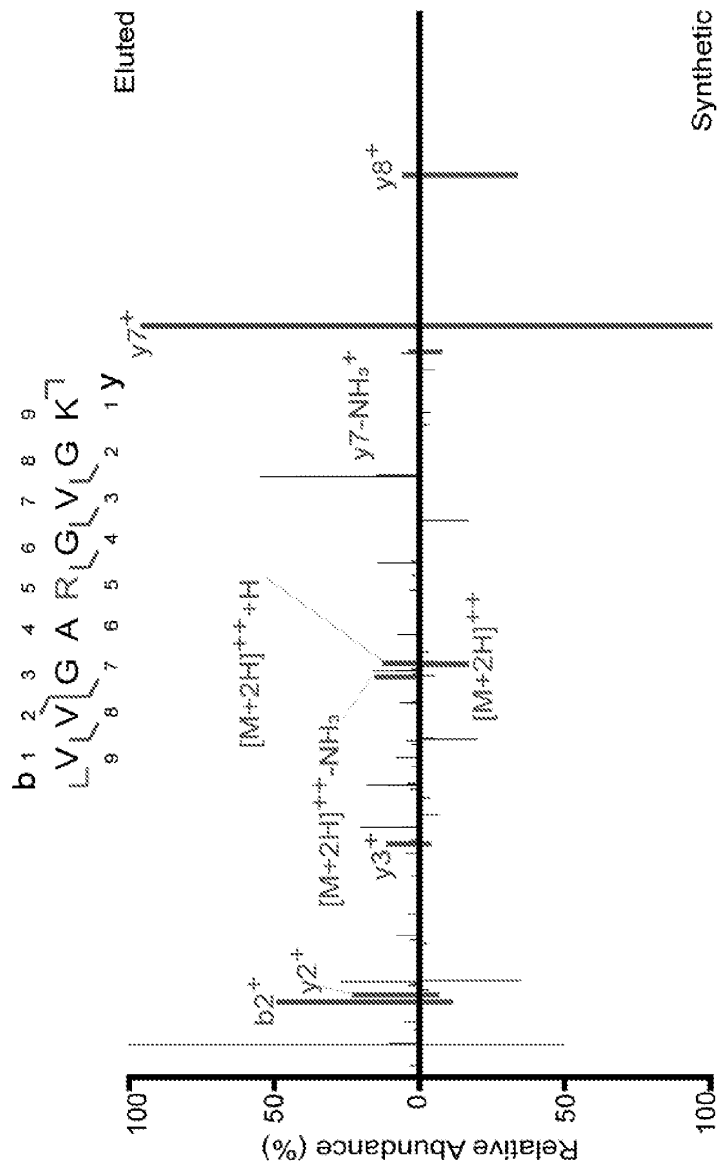


Figure 8I

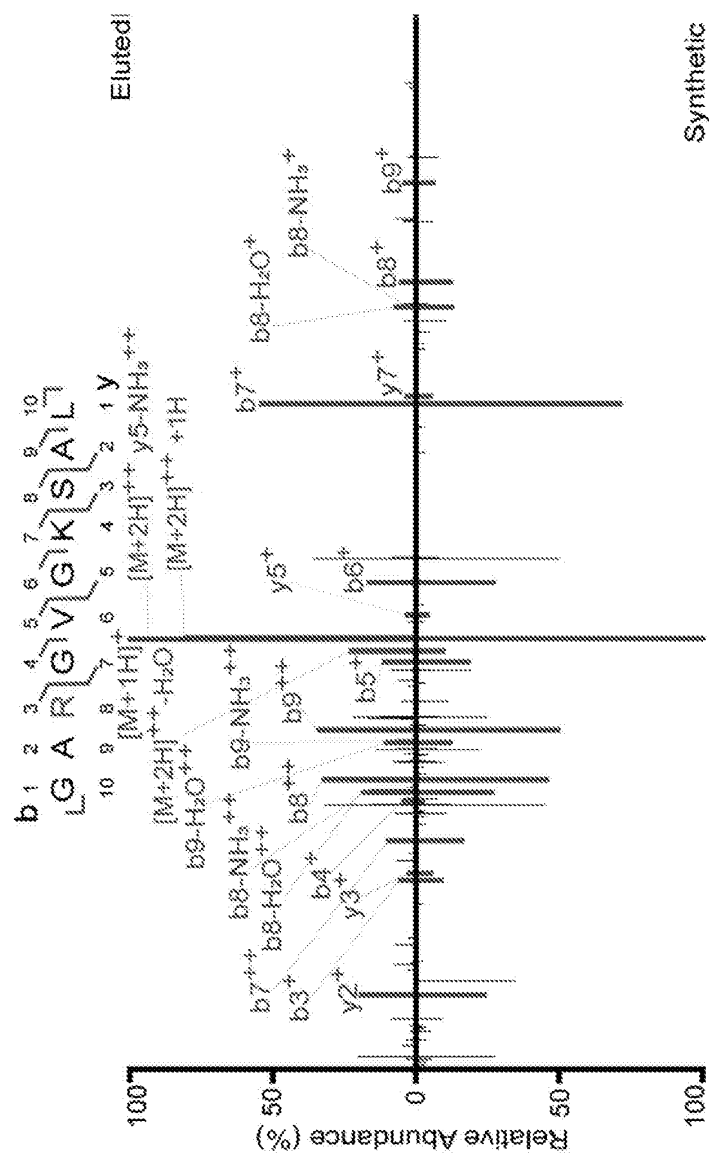


Figure 8J

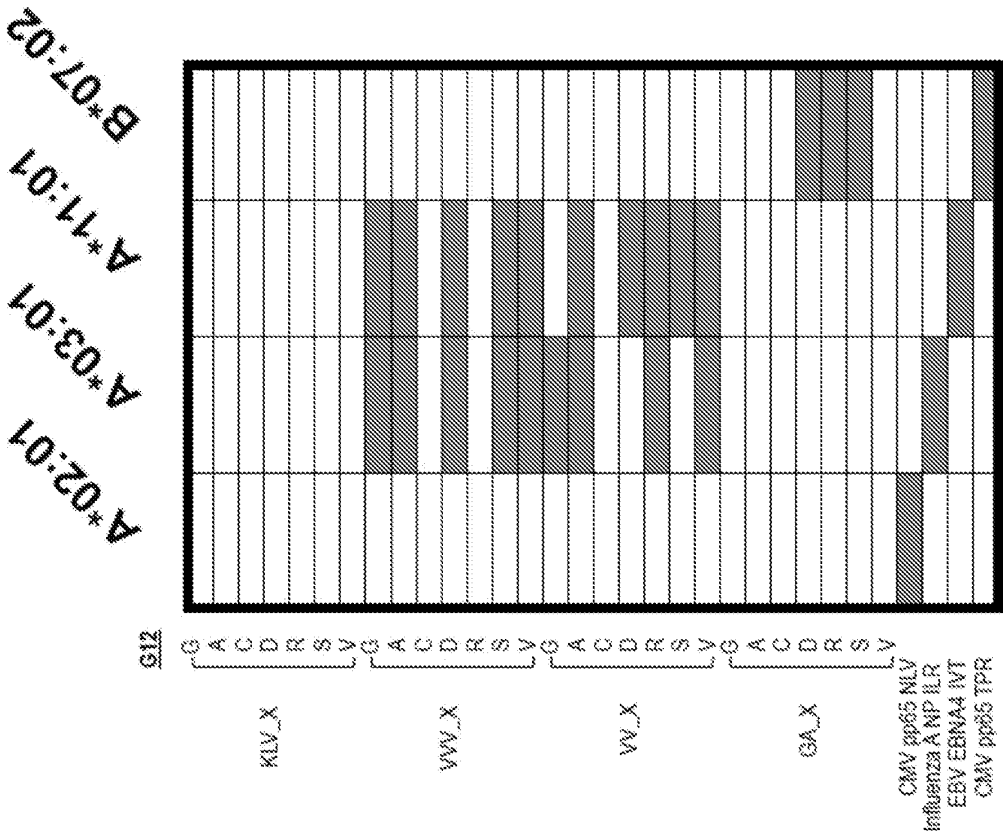
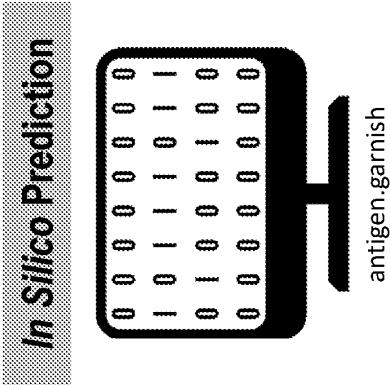


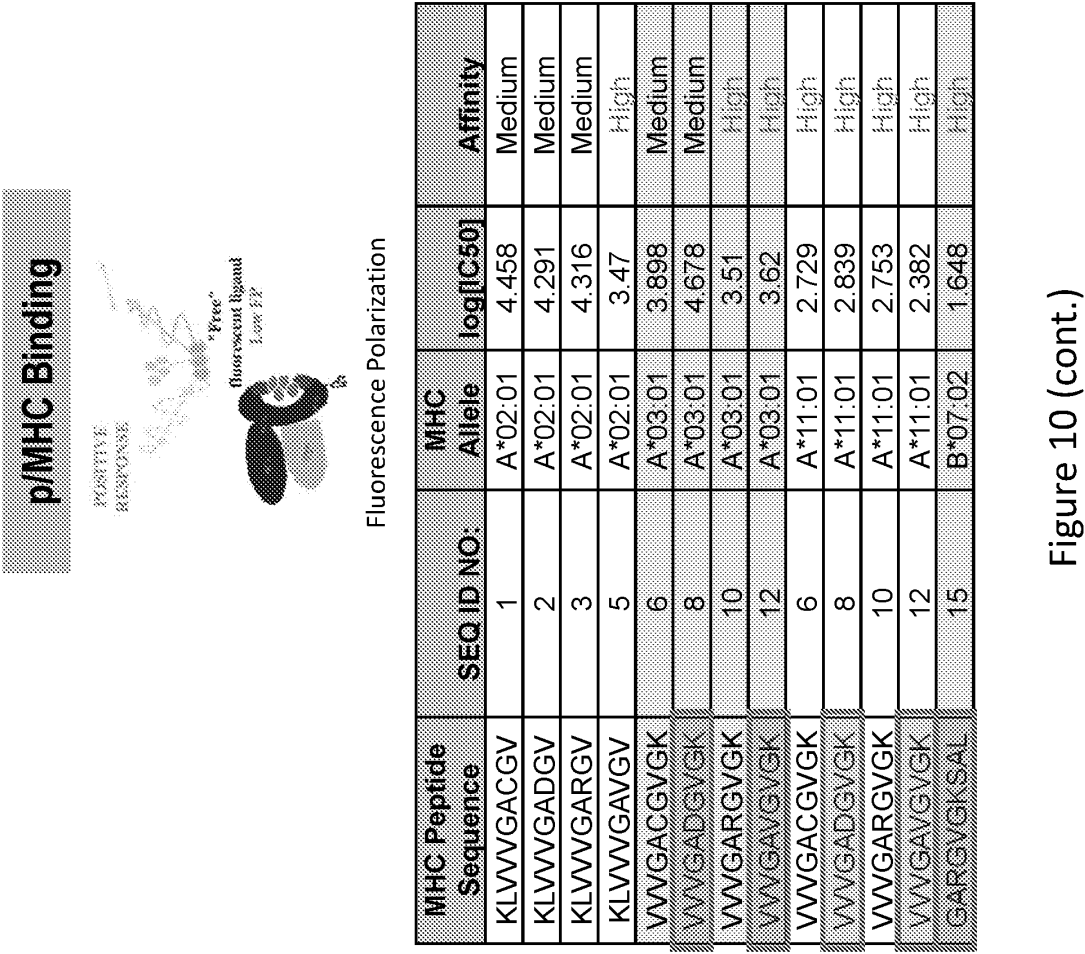
Figure 9



mRAS Short Peptide Library (HLA- & Mutation-Specific)

A*02:01			
G12C	KLVVVGAGGV	(SEQ ID NO:1)	
G12D	KLVVVGAGGV	(SEQ ID NO:2)	
G12R	KLVVVGAGGV	(SEQ ID NO:3)	
G12V	KLVVVGAGGV	(SEQ ID NO:4)	
A*03:01			
G12C	VVVGAGGVGK	(SEQ ID NO:6)	
G12D	VVVGAGGVGK	(SEQ ID NO:8)	
G12R	VVVGAGGVGK	(SEQ ID NO:10)	
G12V	VVVGAGGVGK	(SEQ ID NO:9)	
A*11:01			
G12C	VVVGAGGVGK	(SEQ ID NO:6)	
G12D	VVVGAGGVGK	(SEQ ID NO:5)	
G12R	VVVGAGGVGK	(SEQ ID NO:7)	
G12V	VVVGAGGVGK	(SEQ ID NO:10)	
	VVVGAGGVGK	(SEQ ID NO:9)	
	VVVGAGGVGK	(SEQ ID NO:12)	
	VVVGAGGVGK	(SEQ ID NO:11)	
B*07:02			
G12D	GVVVGAGGVGK	(SEQ ID NO:14)	
G12R	GVVVGAGGVGK	(SEQ ID NO:15)	

Figure 10



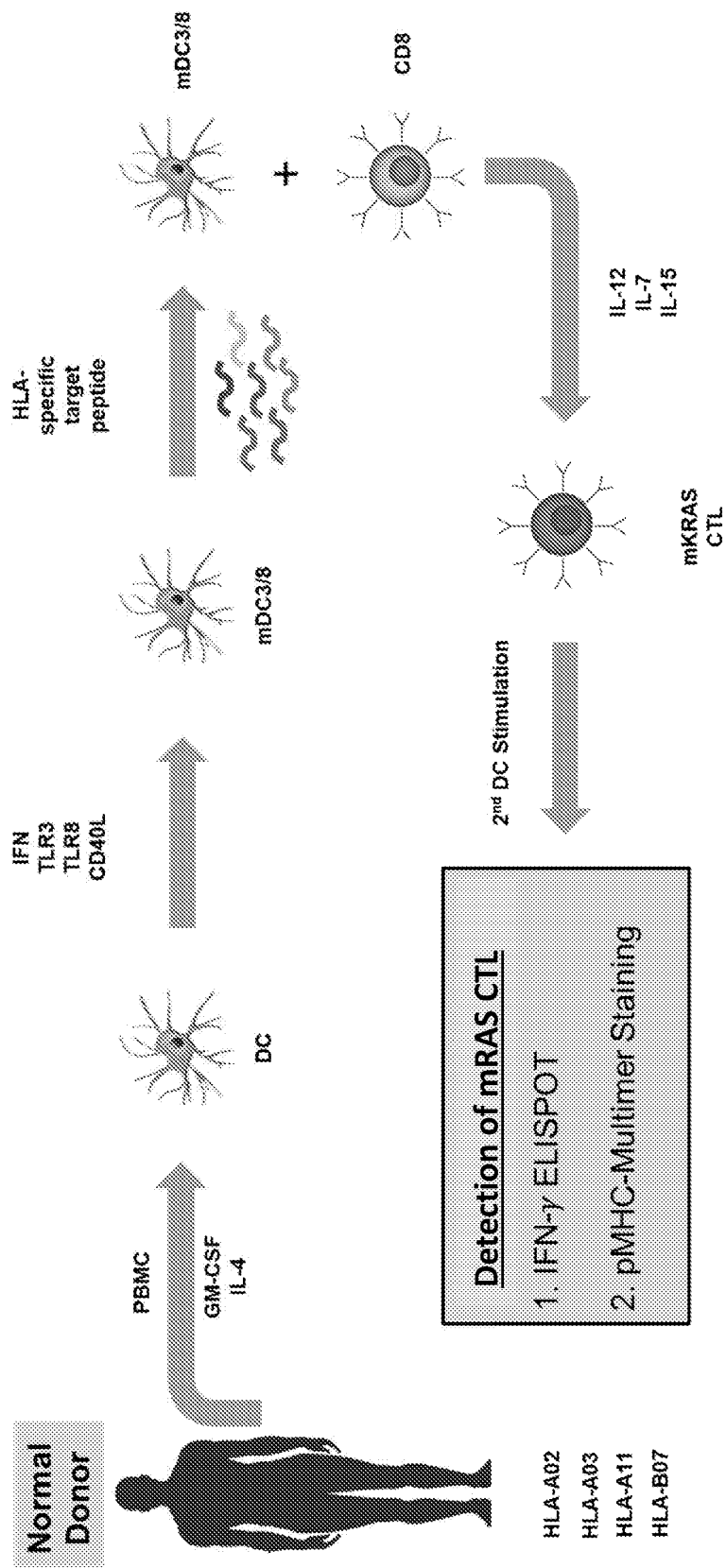


Figure 11

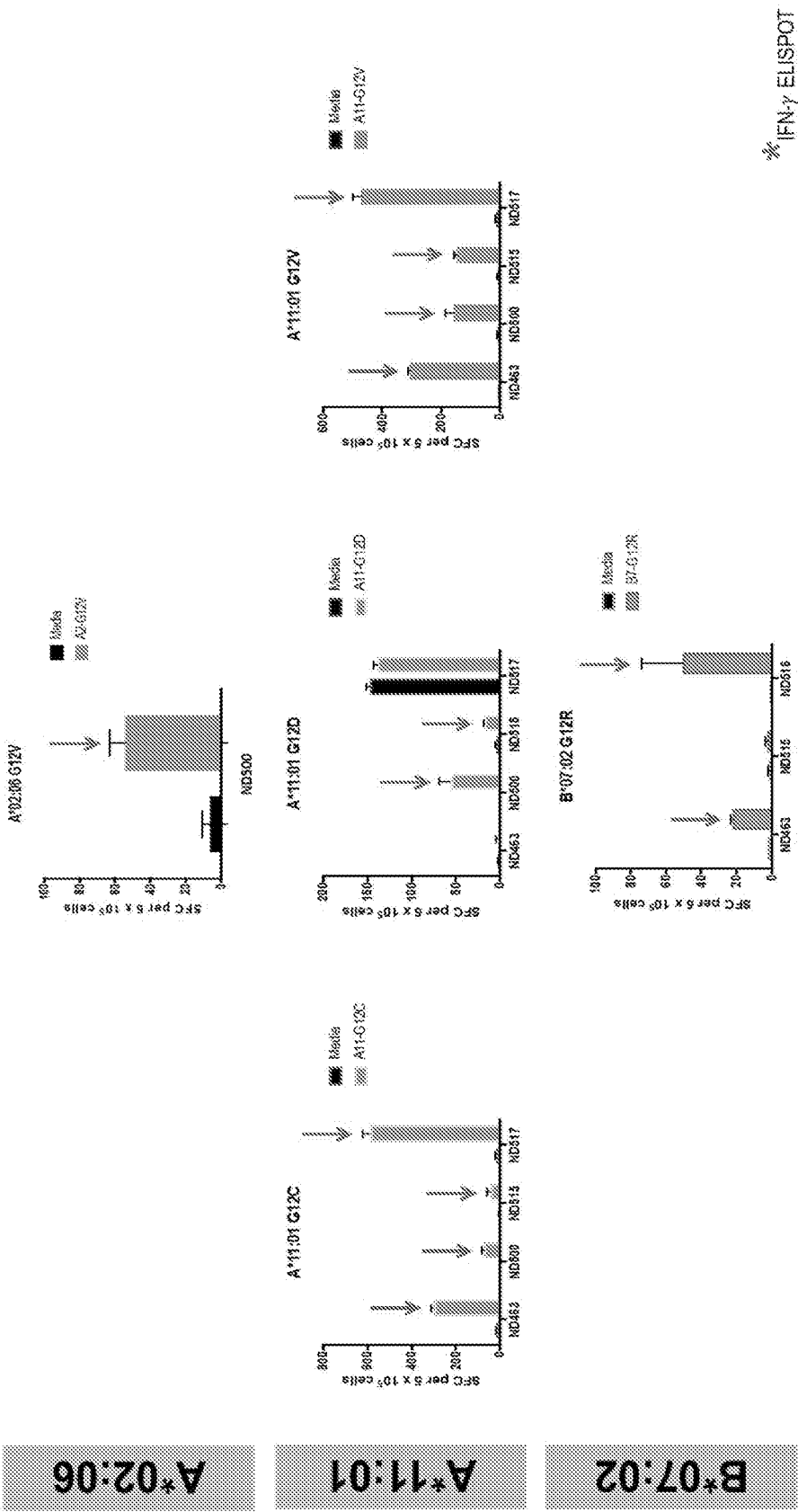
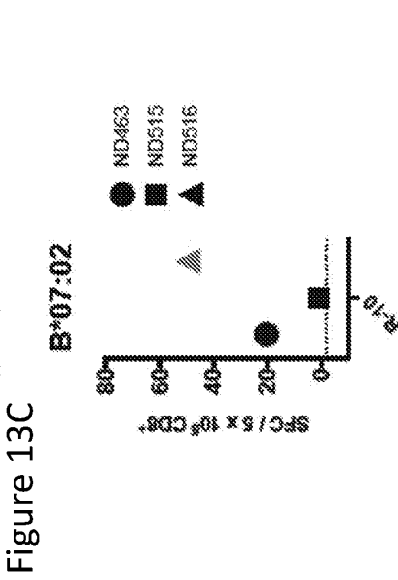
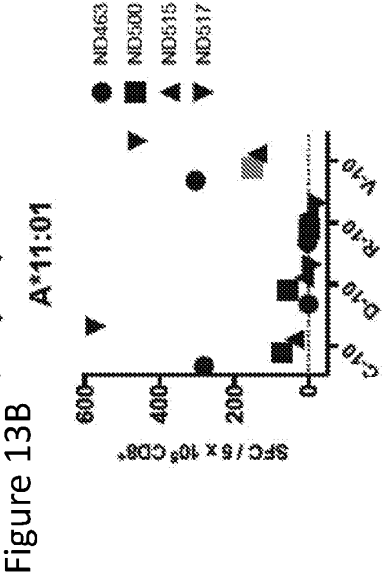
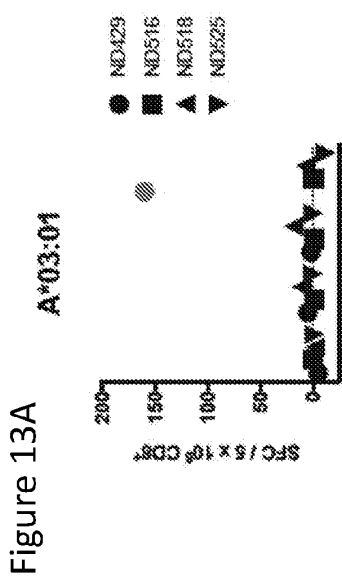
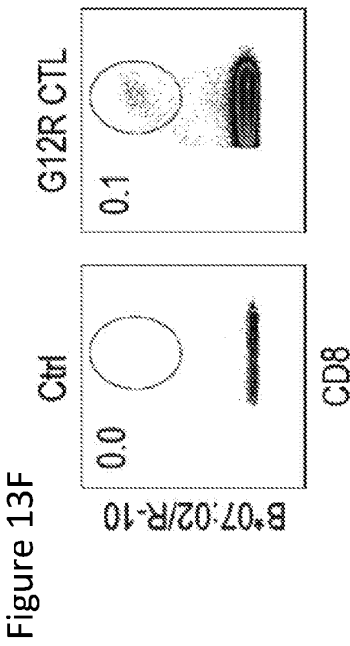
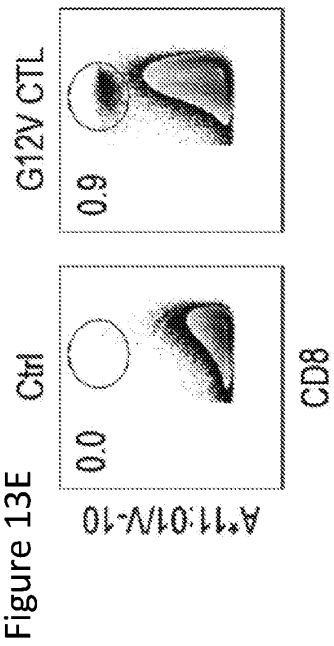
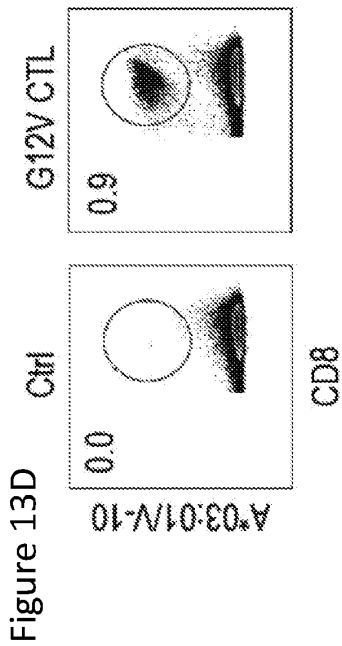


Figure 12



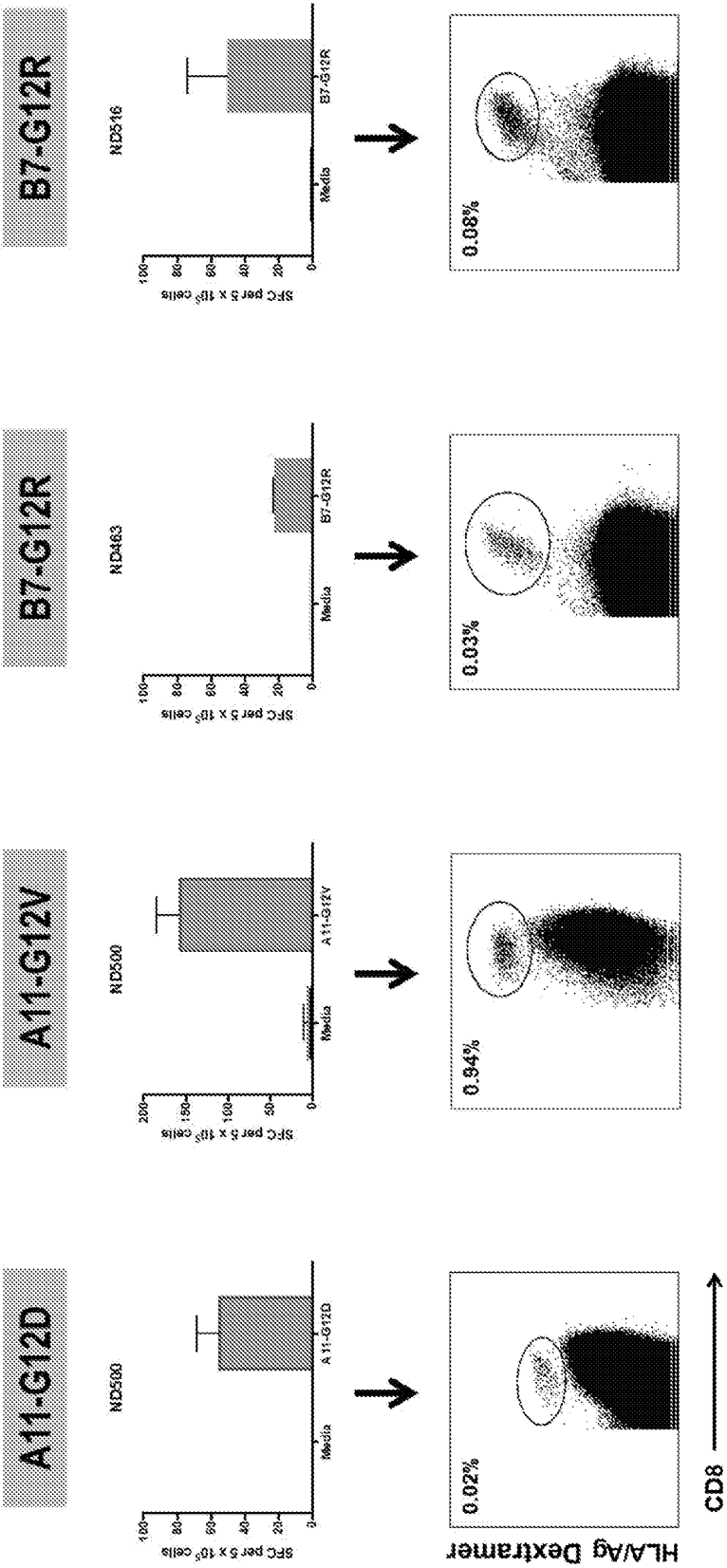


Figure 14

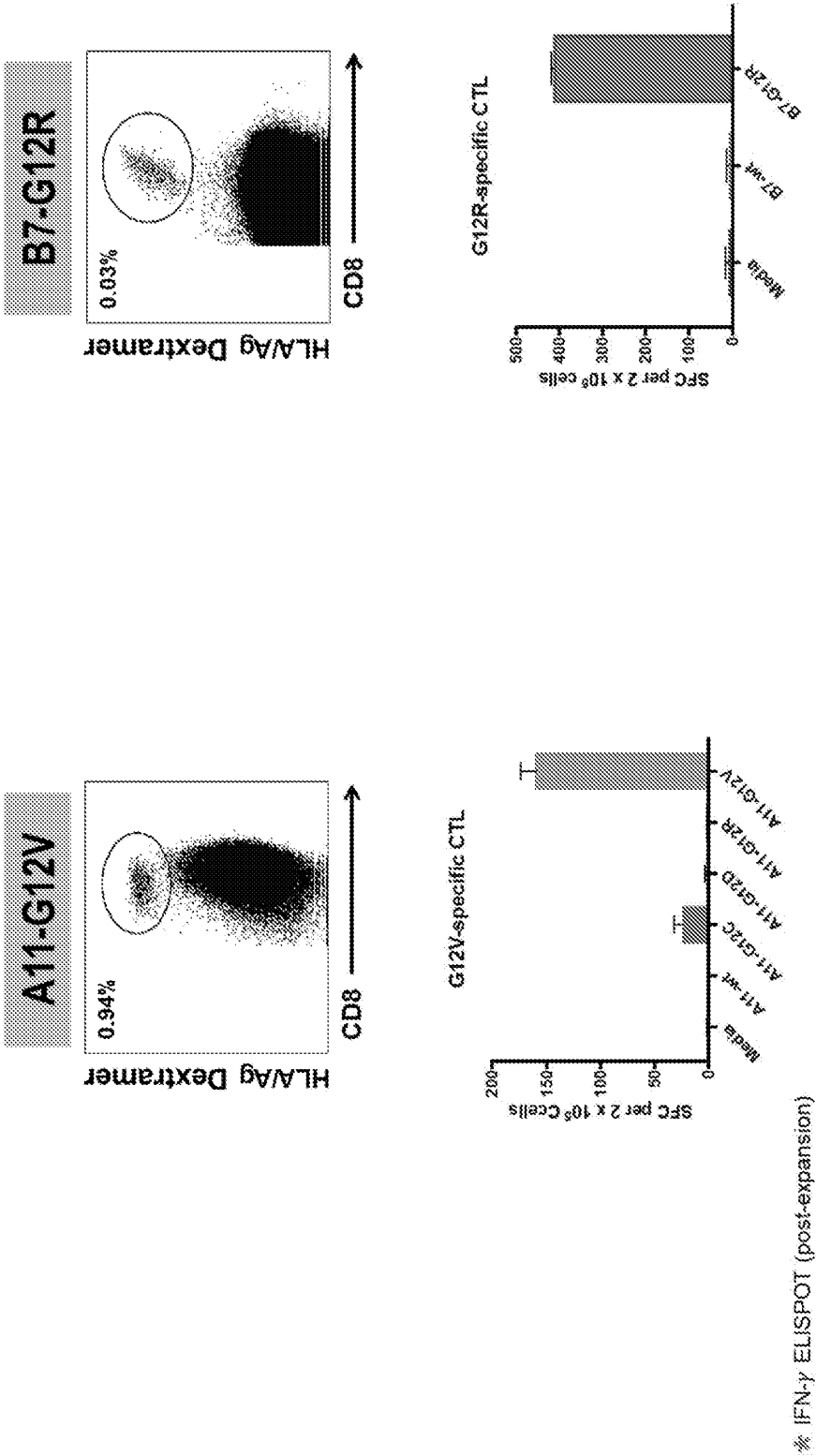


Figure 15

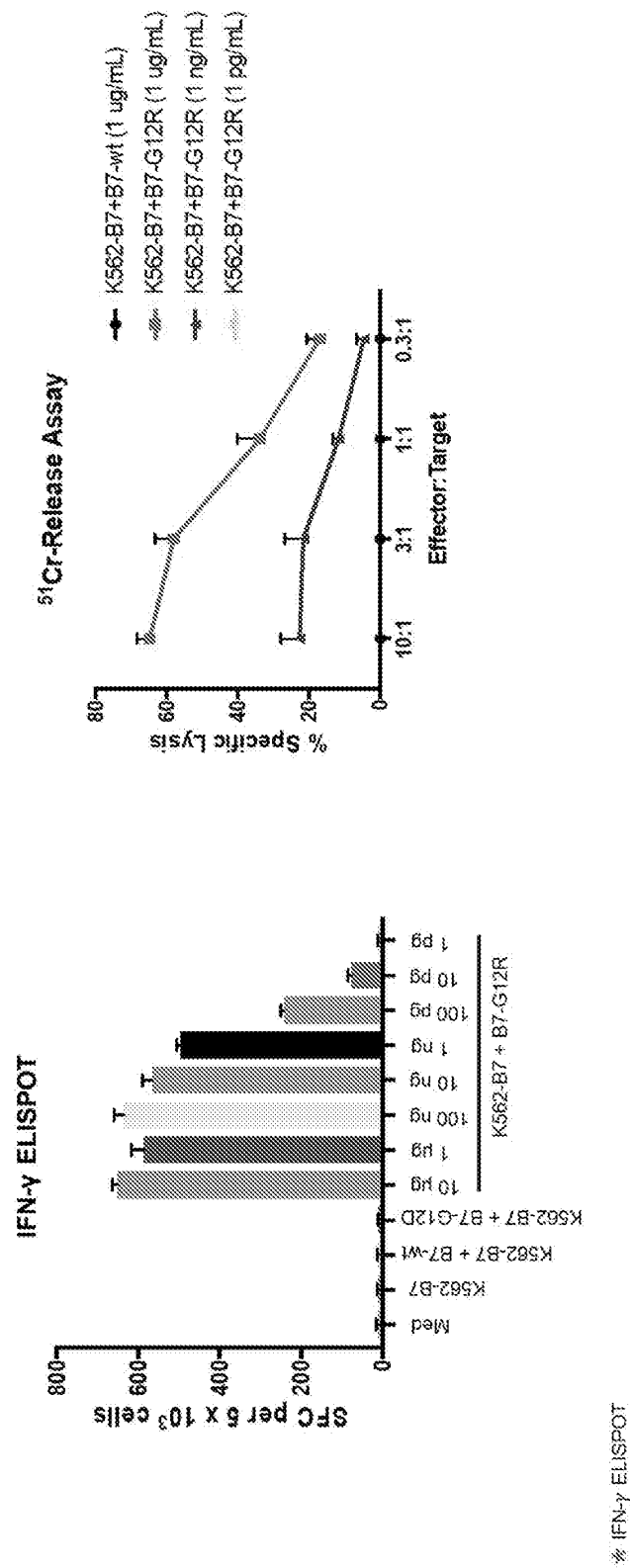


Figure 16

Cell Line	Tumour Type	KRAS MUT	A Allele 1	A Allele 2	B Allele 1	B Allele 2	C Allele 1	C Allele 2
PSN1	pancreatic adenocarcinoma	G12R	24:02	24:02	52:01	52:01	12:02	12:02

Single Chain Dimer Lentiviral Constructs

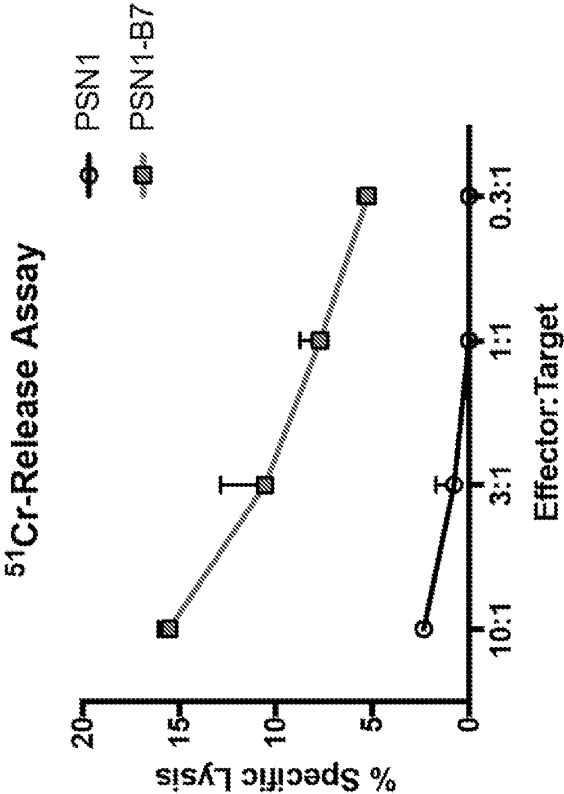
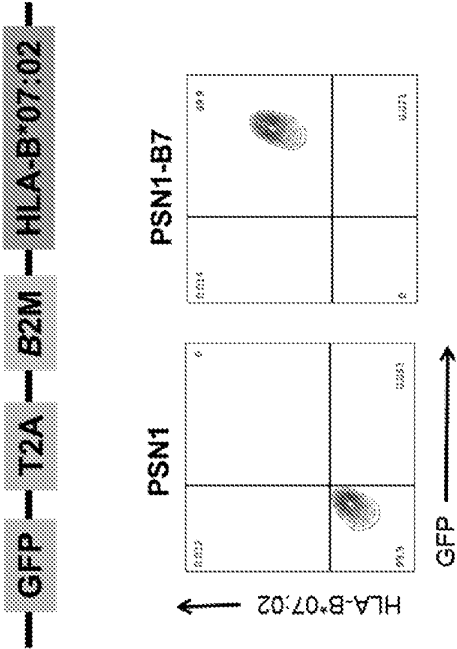


Figure 17

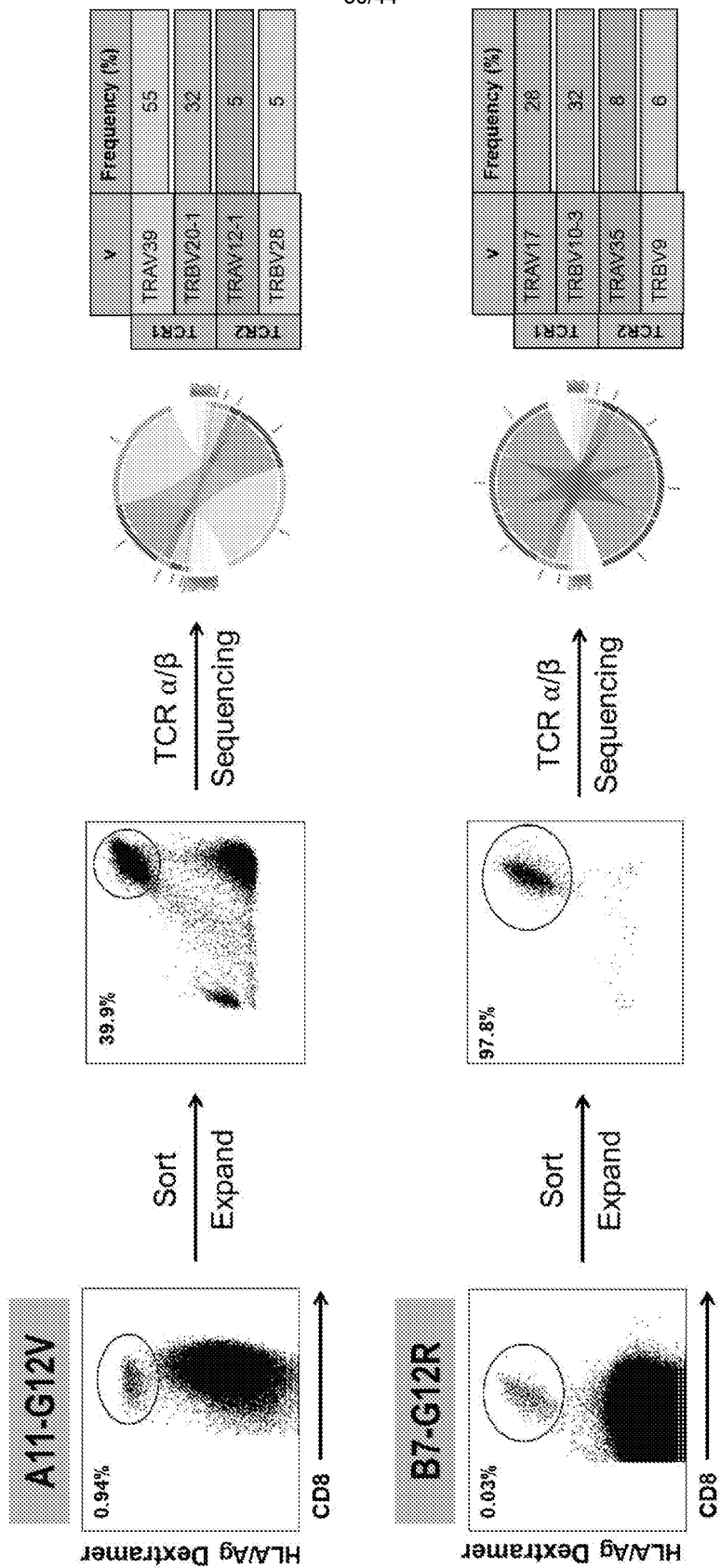


Figure 18

Lentiviral Constructs

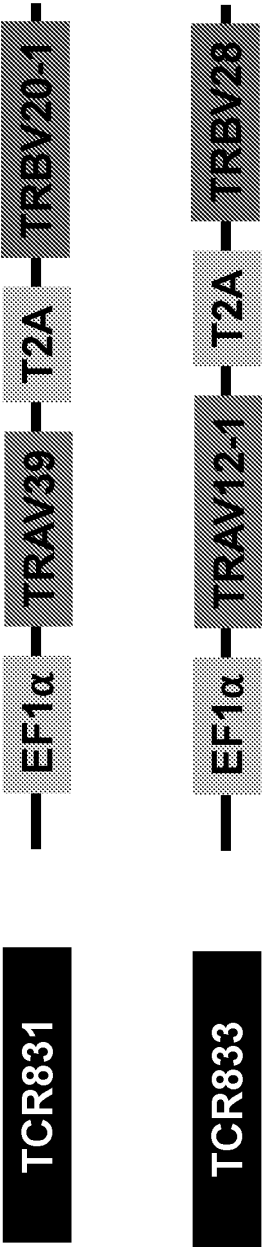


Figure 19

ID	Specificity	Restriction	V α / V β
TCR896	G12V	A*03:01	TRAV19, TRAJ40 TRBV9, TRBD1, TRBJ2-5 CALSEAGTYKYIF (SEQ ID NO:59) CASSVAGGGQETQYF (SEQ ID NO:64)
TCR831	G12V	A*11:01	TRAV39, TRAJ13 TRBV20-1, TRBD1, TRBJ1-6 CAVDKDDGGYQKVTf (SEQ ID NO:19) CSASPRAGQLSSYNsPLHF (SEQ ID NO:25)
TCR833	G12V	A*11:01	TRAV12-1, TRAJ8 TRBV28, TRBD2, TRBJ2-7 CAVNPPDTGFQKLVF (SEQ ID NO:33) CASSLSFRQGLREQYF (SEQ ID NO:39)
TCR897	G12V	A*11:01	TRAV17, TRAJ9 TRBV11-2, TRBJ2-7 CATDPGGFKTf (SEQ ID NO:47) CASSLYGGSISYEQYF (SEQ ID NO:52)
TCR847	G12R	B*07:02	TRAV17, TRAJ48 TRBV10-3, TRBD2, TRBJ2-7 CATFPNFGNEKLTf (SEQ ID NO:71) CAISESERYYEQYF (SEQ ID NO:76)
TCR864	G12R	B*07:02	TRAV4, TRAJ41 TRBV7-2, TRBJ1-2 CLVGDFNSNSGYALNF (SEQ ID NO:83) CASKVYGYTF (SEQ ID NO:88)

Figure 20

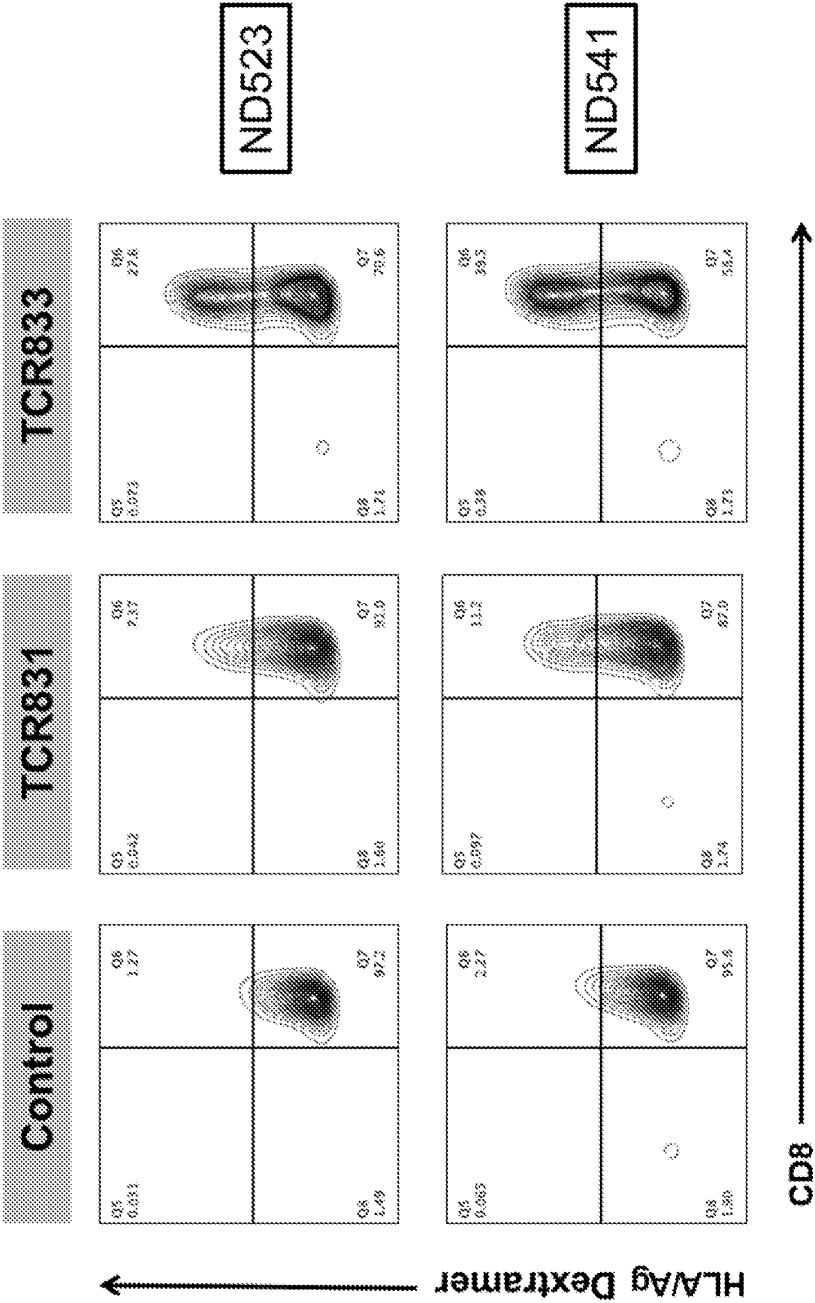


Figure 21

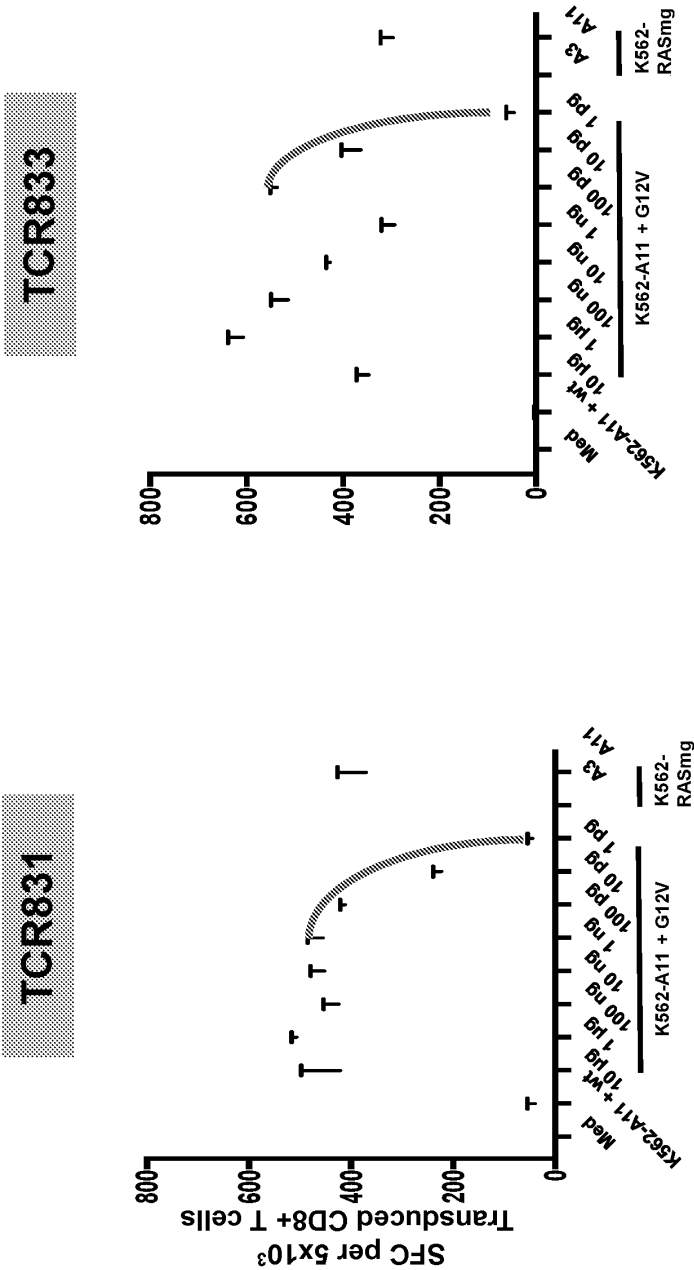
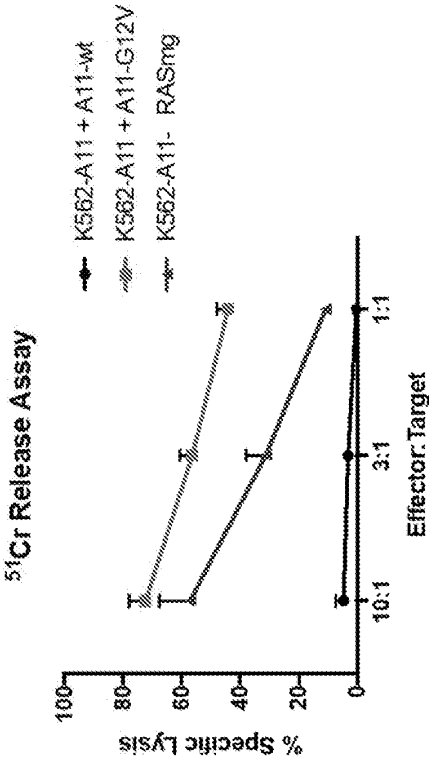


Figure 22

TCR833



TCR831

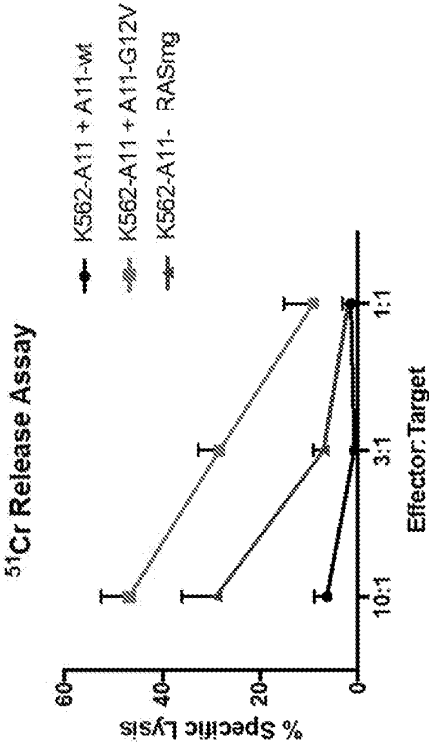


Figure 23

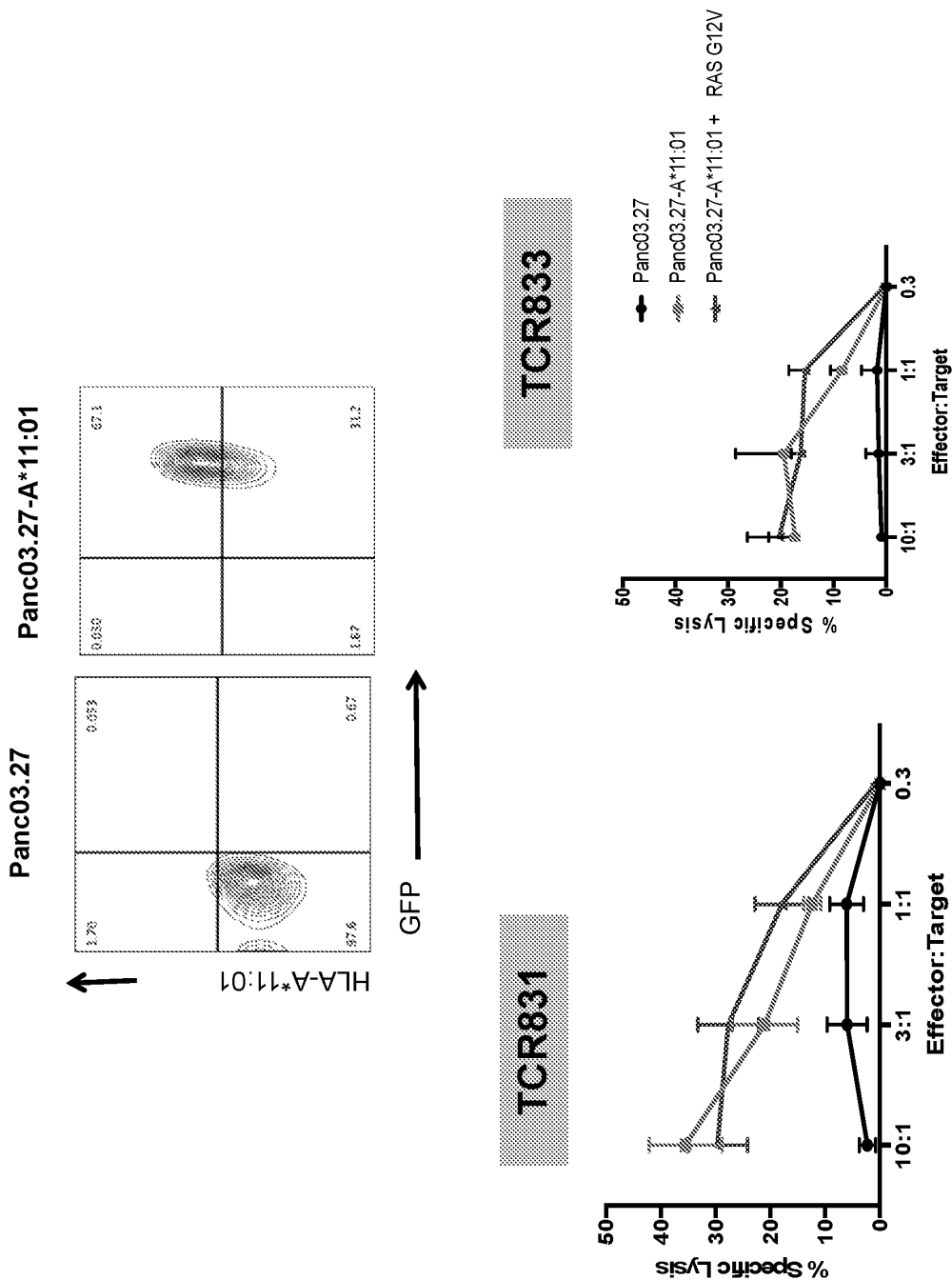
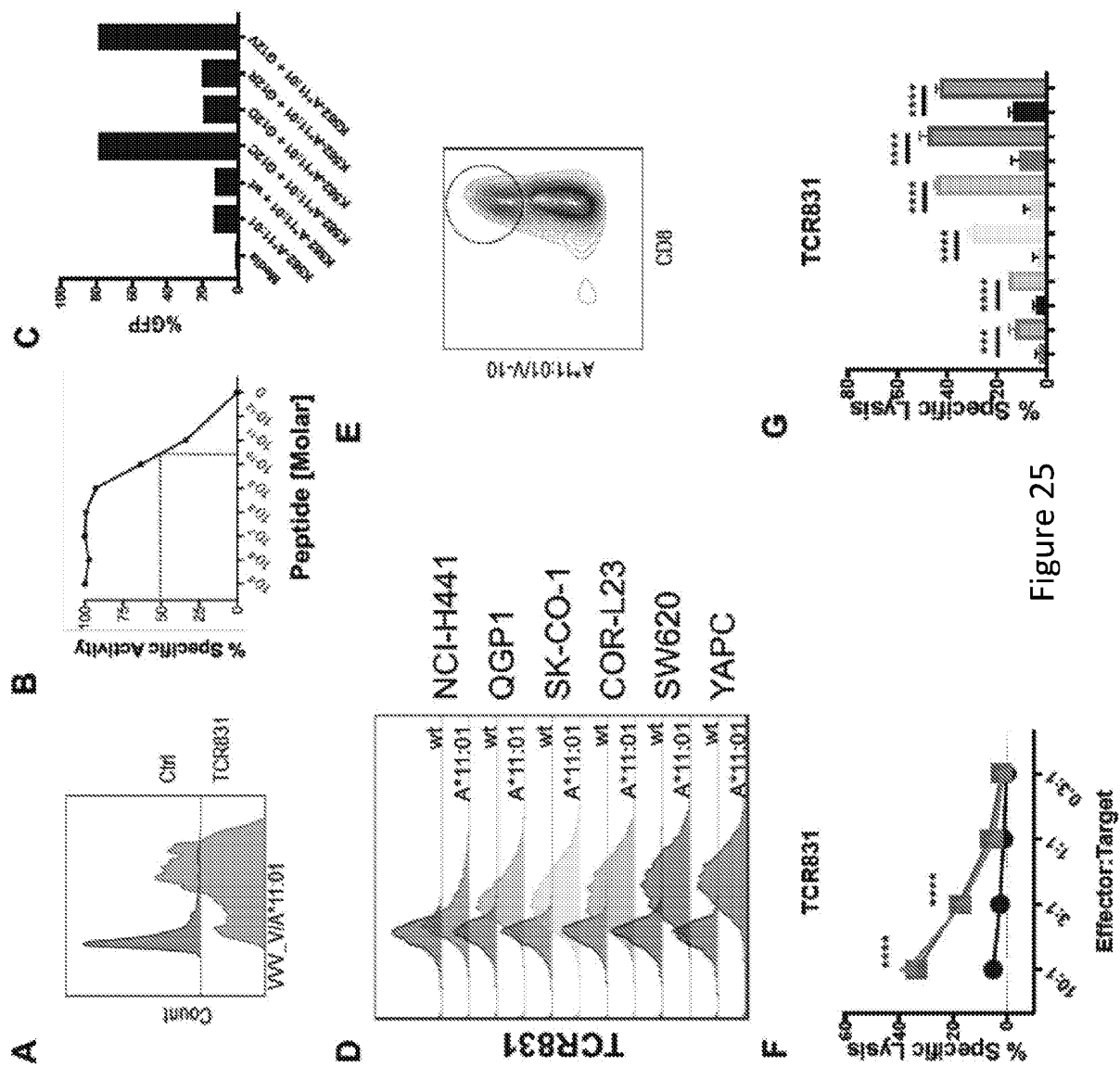
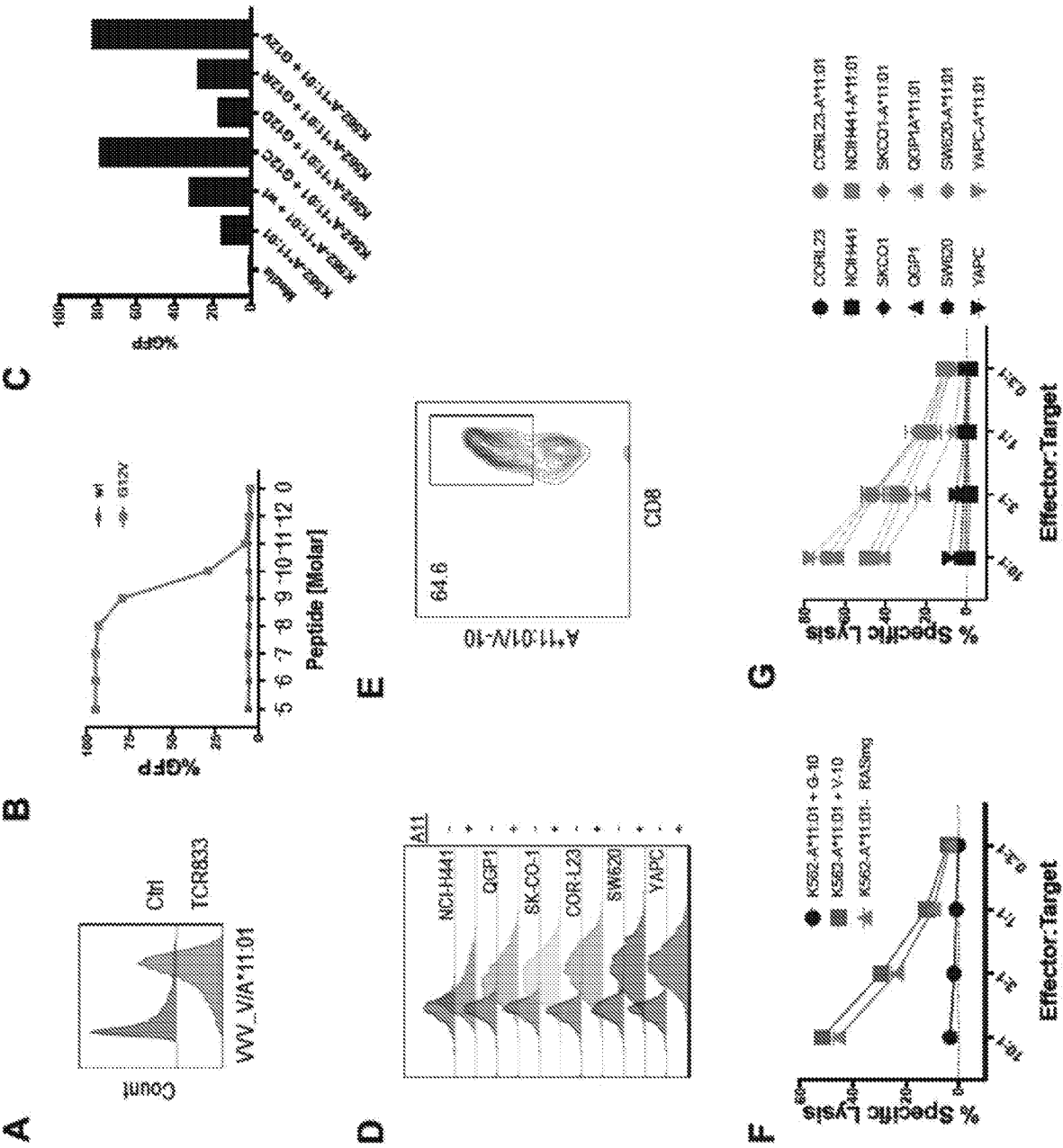


Figure 24





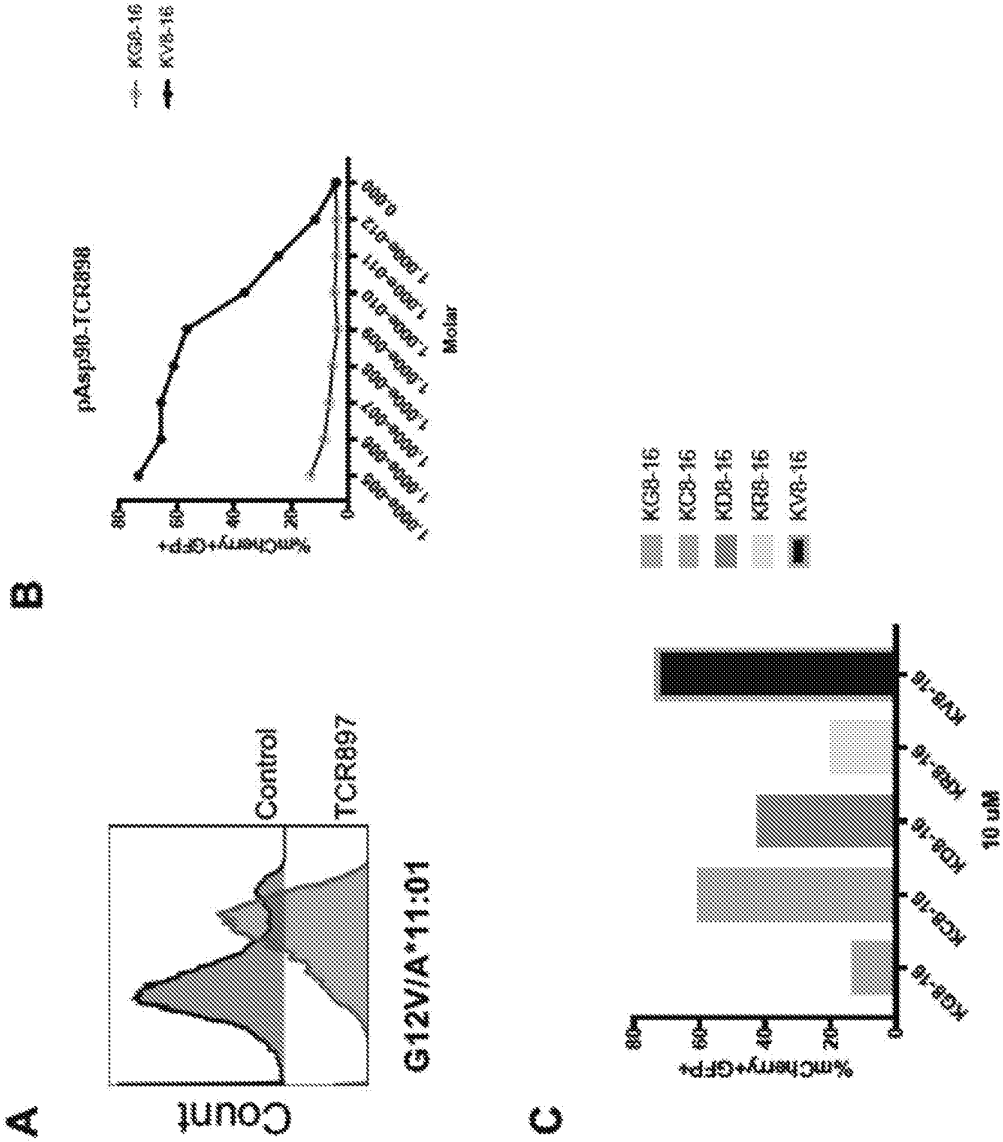
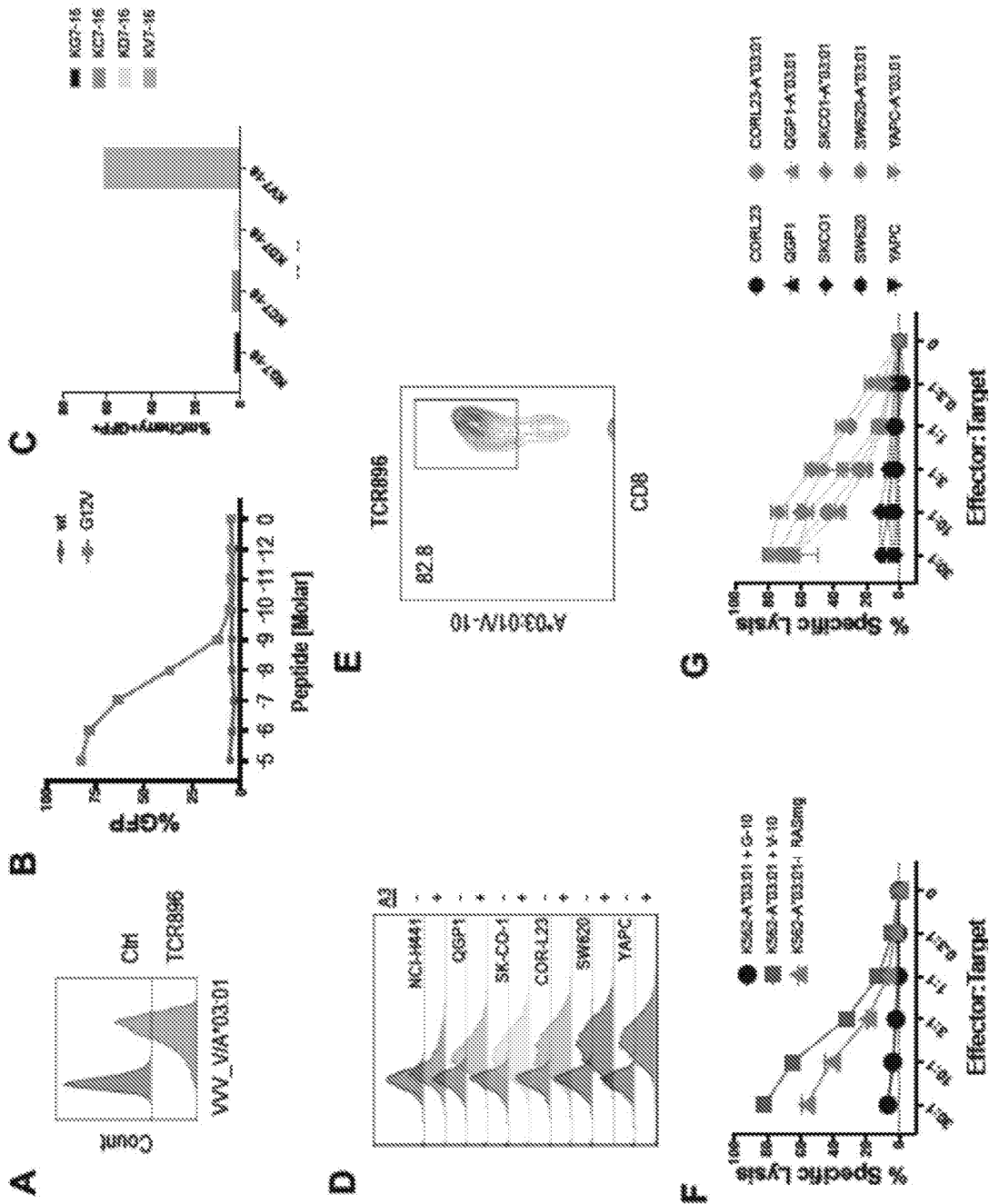


Figure 27



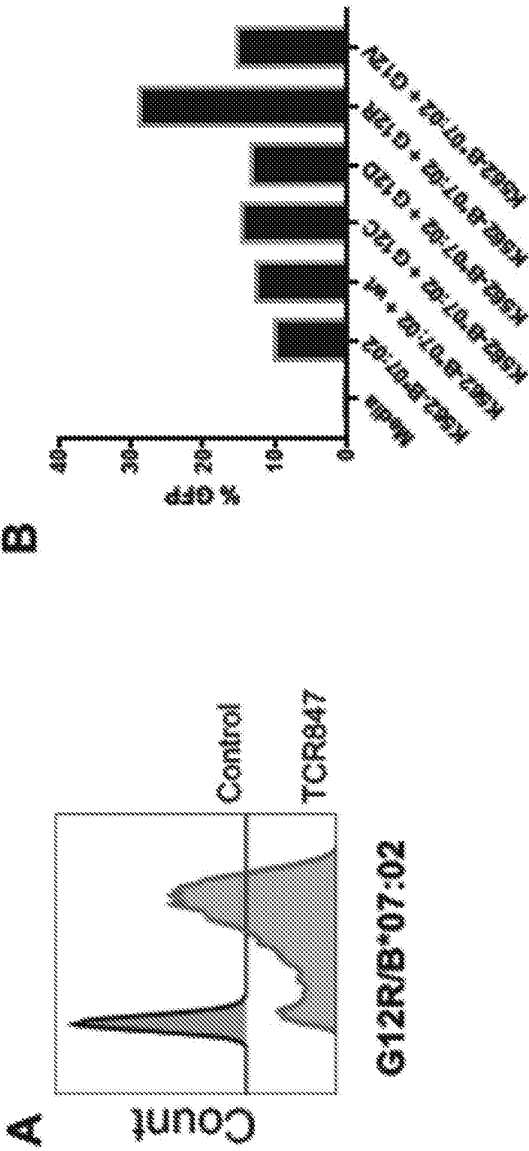


Figure 29

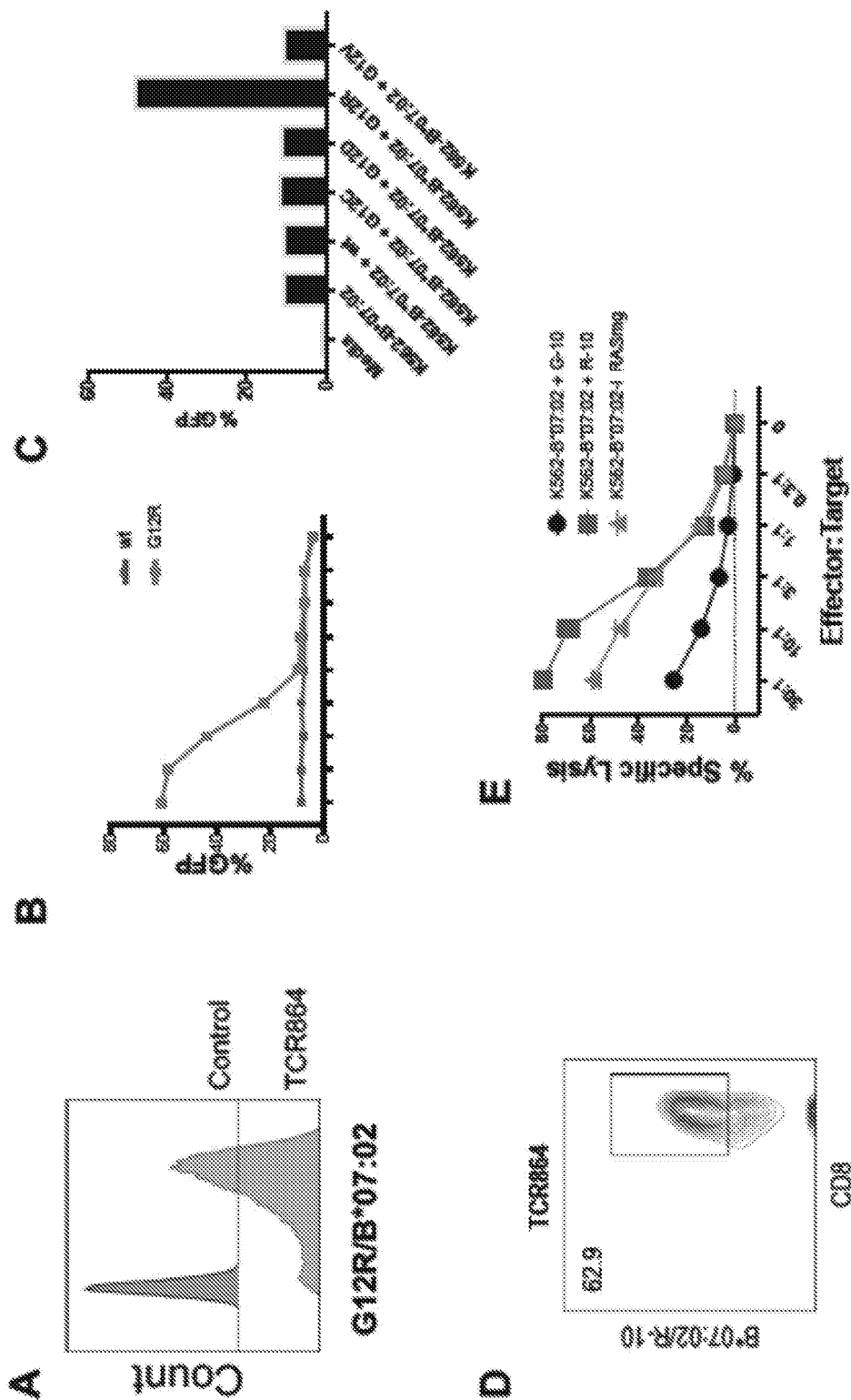
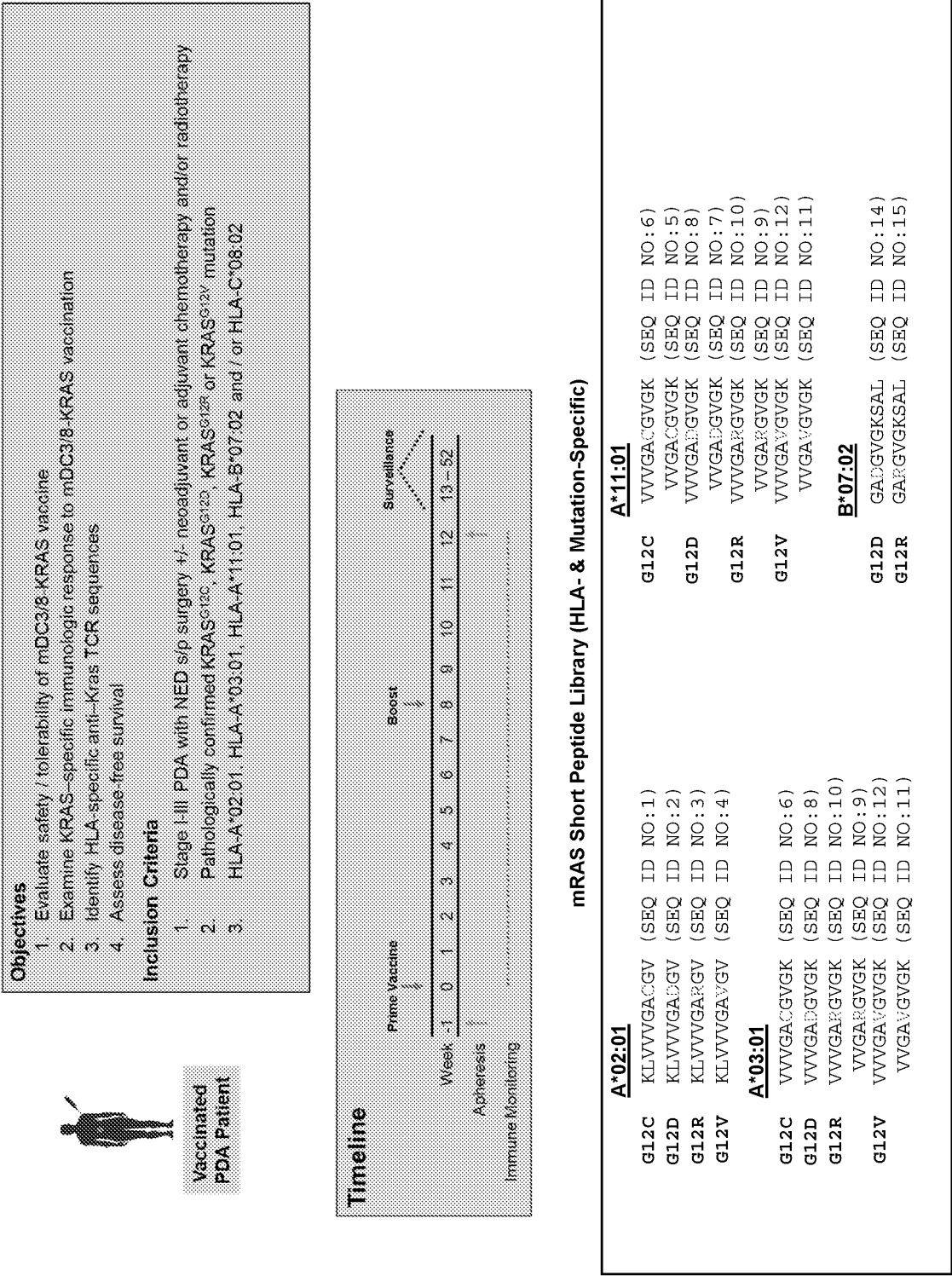


Figure 30



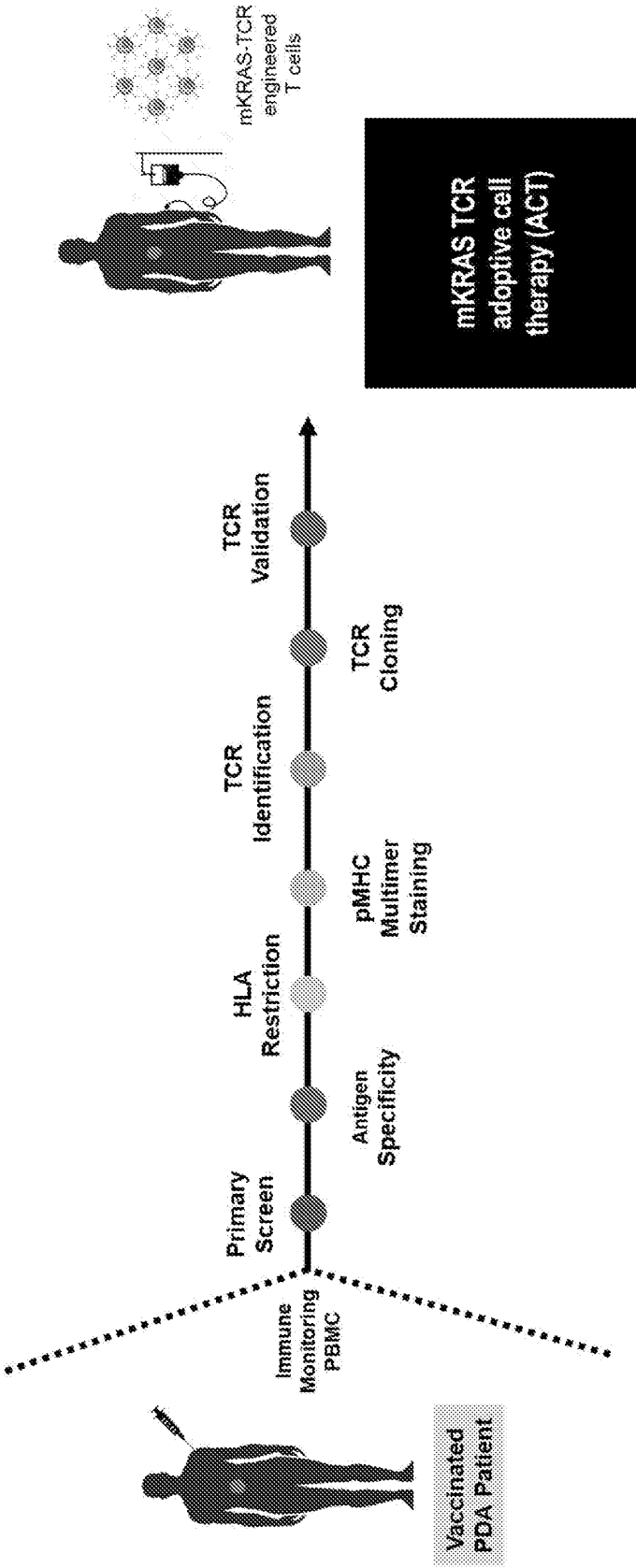


Figure 32