Supplementary Information 4. Summary of expression and class I prediction related to the imm

Patient ID	Immunizing pool	Gene	Protein change	Peptide length	HLA allele	Mutated peptide	
						Sequence	Affinity (nM)
1	A	ACPP	p.E34K	9	A24:02	KLKFVTLVF	142.38
1	A	ACPP	p.E34K	9	B15:01	KLKFVTLVF	31.89
1	A	ACPP	p.E34K	9	A02:01	VLAKKLKFV	52.9
1	A	PRTG	p.F1055L	9	A02:01	FLFQDSKKI	83.31
1	A	PRTG	p.F1055L	9	A24:02	NSKKKWFLF	443.84
1	A	ZBED4	p.S218F	10	B15:01	VQKVASKIPF	78.86
1	B	ARHGEF15	p.V651A	9	B15:01	ALFASRPRF	63.84
1	B	DCAKD	p.S199F	10	A24:02	RFLEYLPLRF	8.56
1	B	DCAKD	p.S199F	9	B44:02	TELERFLEY	46.71
1	B	DCAKD	p.S199F	9	B15:01	LLHTELERF	195.8
1	B	DCAKD	p.S199F	10	A02:01	LLHTELERFL	490.36
1	B	NLRC4	p.D368E	9	A02:01	TLFHTFYEL	6.51
1	B	NLRC4	p.D368E	10	A02:01	TLFHTFYELL	28.42
1	B	NLRC4	p.D368E	10	A24:02	LFHTFYELLI	166.44
1	B	NLRC4	p.D368E	9	A24:02	LFHTFYELL	235.89
1	B	NLRC4	p.D368E	10	A02:01	TTLFHTFYEL	350.83
1	B	NLRC4	p.D368E	10	A24:02	TTLFHTFYEL	403.46
1	C	ADARB1	p.D340N	9	A24:02	KFGDLTNNF	54.4
1	C	CASP5[a]	NeoORF				
1	C	MECOM	p.Q216K	9	A02:01	KLFESKAEL	14.88
1	C	MECOM	p.Q216K	10	A02:01	KLFESKAELA	40.48
1	C	PRRC2C	p.S2300P	9	B15:01	YNSFSSAPM	241.99
1	C	PRRC2C	p.S2300P	10	A24:02	SFSSAPMPQI	461.4
1	D	CASP5[b]	NeoORF				
1	D	LUM	p.G248E	9	A02:01	GIPENSFNV	36.89
1	D	RUSC2	p.S569F	9	B15:01	SVGDFSQEF	284
1	D	RUSC2	p.S569F	10	B15:01	VSVGDFSQEF	155.65
2	A	ADM2[a]	NeoORF	9	B56:01	TPAAPTAMA	60
2	A	ADM2[b]	NeoORF				
2	A	C14orf101[a]	p.R490Q	9	B56:01	FPGNQWNPV	25
2	A	CDK13	p.G857R	10	A01:01	LADFRLARLY	13.29
2	A	POLQ	p.S1719F	9	B38:01	NHDETSFLL	5
2	B	ADM2[c]	NeoORF	9	B56:01	TPAHPSQGA	400
2	B	ADM2[c]	p.G97fs	10	B56:01	TPAHPSQGAV	0.50 (%rank)
2	B	ADM2[d]	NeoORF				
2	B	ITGA9	p.L548P	9	A01:01	VTEKLQPTY	28.34
2	B	PRRC2A	p.L528H	10	B56:01	HPAPPAPPPA	25
2	B	PRRC2A	p.L528H	10	B56:01	VPKEHPAPPA	0.30 (%rank)
2	C	ADM2[e]	NeoORF				

2	C	CCDC80	NeoORF	9	B56:01	RPAARGSRV	500
2	C	DDX3X	p.E388K	9	B56:01	FPKKIQMLA	50
2	C	PCDH1	p.S569F	10	A01:01	FLDREQRESY	28.41
2	D	BAZ2A	p.S500F	9	B56:01	FPAAAFPTA	5
2	D	BAZ2A	p.S500F	9	B56:01	SPVTFPAAA	0.10 (%rank)
2	D	BAZ2A	p.S500F	10	B56:01	FPAAAFPTAS	0.12 (%rank)
2	D	C14orf101[b]	p.A59D	9	A01:01	ITDAHELGV	147.21
2	D	C14orf101[b]	p.A59D	10	A01:01	ITDAHELGVA	474.22
2	D	JPH1	p.T59I	9	A01:01	YTWPSGNIY	60.22
2	D	RIF1	NeoORF				
3	A	DNASE1L1	p.P140S	10	A02:01	VLSSLVLVPL	24.51
3	A	DNASE1L1	p.P140S	9	A02:01	NVLSSLVLV	58.9
3	A	DNASE1L1	p.P140S	10	A02:01	SLPSNVLSSL	159.49
3	A	PRKCG	p.E525K	10	A03:01	KIIAYQPYGK	50.14
3	A	TLR3	p.R489K	10	A03:01	RLMLRKVALK	28.68
3	A	TLR3	p.R489K	10	B27:05	QRLMLRKVAL	90.29
3	A	TLR3	p.R489K	9	A02:01	RLMLRKVAL	303.28
3	A	TLR3	p.R489K	10	A02:01	SLQRLMLRKV	478.89
3	B	FAM190A	p.V195A	10	A02:01	ALQSQSISLV	28.16
3	B	FAM190A	p.V195A	9	A02:01	ALQSQSISL	93.83
3	B	GTF3C2	p.D811N	9	A02:01	YLLFQNTDL	42.28
3	B	KCNC3	p.P715L	10	A03:01	ALSPDGSIRK	107.78
3	B	KCNC3	p.P715L	9	A02:01	FLLTDYALS	172.65
3	B	TBC1D14	p.S42F	10	A03:01	LLFAPEYGPK	32.81
3	C	CASP1	p.P172S	10	B27:05	WRNILLLSLH	63.38
3	C	CASP1	p.P172S	10	A03:01	SLHKGSLYPR	286.7
3	C	CIT	p.P2056L	9	A02:01	TLLSQVNKV	60.92
3	C	CIT	p.P2056L	10	B27:05	VRTLLSQVNK	272.84
3	C	ENDOV	p.E257K	10	A03:01	RTAPRPGSQK	114.76
3	C	VPS16	p.S404F	10	A03:01	SLLRAAFFGK	26.91
3	C	VPS16	p.S404F	10	B27:05	LRAAFFGKCF	191.23
3	D	ADAMTS7	p.T96I	10	B27:05	LRFNLIANQH	97.24
3	D	CRY1	p.S71F	9	A02:01	KLNFRLFVI	42.53
3	D	CRY1	p.S71F	10	B27:05	RKLNFRLFVI	189.69
3	D	CRY1	p.S71F	10	A03:01	KLNFRLFVIR	265.62
3	D	ZNF234	p.H282Y	10	A03:01	RIYTGEKPFK	18.67
4	A	ARHGAP29	p.G670E	9	B18:01	FEAEFTQVA	41.66
4	A	DHX40[b]	NeoORF	9	A02:01	ILMHGLVSL	6.29
4	A	DHX40[b]	p.S754fs	10	B27:02	RRNDDKSILM	0.50 (%rank)
4	A	DHX40[b]	p.S754fs	10	A02:01	SILMHGLVSL	310.72
4	A	DHX40[a]	NeoORF	10	B27:02	RRWSALVIGL	5.001
4	A	DHX40[a]	p.S754fs	9	B27:02	KRRWSALVI	0.12 (%rank)
4	A	DHX40[a]	p.S754fs	9	B27:02	RRWSALVIG	0.80 (%rank)
4	A	DHX40[a]	p.S754fs	10	A25:01	STTKRRWSAL	1.00 (%rank)
4	A	MKNK1	p.P265S	9	A02:01	YMASEVVEV	2.19

4	A	MKNK1	p.P265S	10	A02:01	YMASEVVEVF	356.03
4	B	ABCB5	p.M632I	9	B18:01	DEQIESMTY	9.14
4	B	DHX40[c]	NeoORF	10	A02:01	KQAKVVNPPI	134.81
4	B	DHX40[c]	p.S754fs	10	B27:02	KQAKVVNPPI	1.00 (%rank)
4	B	MGA	p.N2653D	9	A02:01	FMMPRIVDV	2.7
4	B	MGA	p.N2653D	10	A02:01	FMMPRIVDVT	15.54
4	C	CCDC66	NeoORF	10	A02:01	MTFSSTKDYV	173.97
4	C	HLA-DQA1	p.P113S	9	B18:01	NEVSEVTVF	28.49
4	C	PATL1	p.F288Y	10	A02:01	SQFARVPGYV	46.52
4	C	PATL1	p.F288Y	9	A25:01	YVGSPLAAM	1.00 (%rank)
4	C	PATL1	p.F288Y	9	B27:02	SQFARVPGY	1.00 (%rank)
4	C	TNR	p.R1007W	9	A02:01	WLVDLLPST	17.19
4	C	TNR	p.R1007W	9	B18:01	EEFWLVDLL	34.7
4	C	TNR	p.R1007W	10	B18:01	EEFWLVDLLP	372.84
4	D	ATF7IP	p.P1205L	9	A02:01	HLYAYHEEL	15.46
4	D	ATF7IP	p.P1205L	9	B18:01	EELSATVPS	79.41
4	D	ATF7IP	p.P1205L	10	B18:01	EELSATVPSQ	360.22
4	D	IDH2	p.R188W	9	A25:01	FVADWAGTF	15.001
4	D	RPTOR	p.S755F	10	B18:01	EESGGAVAFF	10.95
4	D	RPTOR	p.S755F	9	A25:01	ESGGAVAFF	1.00 (%rank)
5	A	FAM200A	p.S116F	9	B35:01	IPLSDNTIF	25.16
5	A	GRIN2B	p.E1104K	9	B41:02	REFDKIELA	70.91
5	A	GRIN2B	p.E1104K	10	B41:02	REFDKIELAY	288.76
5	A	MUC5B[a]	NeoORF	10	A23:01	SYQRYSHPLF	3.16
5	A	PSMB7	p.P158L	10	A23:01	IYLHGSTDKL	21.08
5	A	TBX4	p.S271F	9	B35:01	YPVIFKSIM	15.59
5	A	TBX4	p.S271F	10	B41:02	KEYPVIFKSI	46.69
5	A	TBX4	p.S271F	9	A23:01	EYPVIFKSI	96.69
5	A	TBX4	p.S271F	10	A23:01	IFKSIMRQRL	298.36
5	B	CASC1	p.H265Y	10	B41:02	YDYVSALHPV	118.72
5	B	CASC1	p.H265Y	10	A66:01	HTHYDYVSAL	134.74
5	B	CASC1	p.H265Y	9	A23:01	DYVSALHPV	236.35
5	B	COL22A1	p.D291N	9	B35:01	FPQGLPNEY	4.89
5	B	COL22A1	p.D291N	10	B35:01	LPNEYAFVTT	142.25
5	B	COL22A1	p.D291N	9	B35:01	LPNEYAFVT	149.54
5	B	COL22A1	p.D291N	9	B41:02	NEYAFVTTF	179.52
5	B	COL22A1	p.D291N	9	A23:01	QGLPNEYAF	394.63
5	B	FIGN	p.R520Q	9	A23:01	ALPQSILLF	88.46
5	B	FIGN	p.R520Q	10	A23:01	TALPQSILLF	121.24
5	B	FIGN	p.R520Q	10	B35:01	TALPQSILLF	214.67
5	B	MAP4K4	p.S639L	9	B35:01	SPVLRSHSF	37.38
5	B	MUC5B[b]	NeoORF	9	A23:01	SYQLYTHPL	6.94
5	C	ADCK3	p.L145R	9	A23:01	RFANPRDSF	119.83
5	C	CLEC2B	p.E77K	9	A66:01	TIIDNIKEM	96.35
5	C	ZFYVE26	p.S544F	10	A23:01	LFSPGAANLF	28.84
5	C	ZFYVE26	p.S544F	9	A23:01	FSPGAANLF	405.26

5	C	ZMIZ2	p.P301L	9	B35:01	QPPALSPSY	55.19
5	C	ZMIZ2	p.P301L	10	B35:01	APSPGQPPAL	335.87
5	C	ZNF281	p.G119E	10	B35:01	FPSQRTSWEF	5.49
5	D	MED24	p.V981M	10	B35:01	MPFTTVSELM	6.25
5	D	MED24	p.V981M	9	B41:02	SELMKVSAM	46.75
5	D	MUC5B[c]	NeoORF	9	B41:02	HQFHVHPLL	116.84
5	D	OVGP1	p.P446S	10	A66:01	MTITSRGTTV	125.96
5	D	PDIA6	p.P290S	10	A23:01	RYGIRGFSTI	11.08
5	D	PDIA6	p.P290S	9	A23:01	YGIRGFSTI	90.29
5	D	PIK3R2	p.E5K	9	B35:01	MAGPKGFQY	81.8
6	A	FAM50B	p.E78K	9	B08:01	DMKARQKAL	12.27
6	A	FAM50B	p.E78K	10	B08:01	DMKARQKALV	126.17
6	A	MLL	p.P3239L	9	B08:01	TRKNKKLAL	85.77
6	A	MLL	p.P3239L	10	B08:01	QTRKNKKLAL	287.14
6	A	RALGAPB	NeoORF	10	B08:01	LFRIKFKEPL	54.36
6	A	SMC4	p.L1262F	9	A01:03	ISDRFIGIY	9.56
6	A	SMC4	p.L1262F	10	A66:01	EISDRFIGIY	28.69
6	A	SMC4	p.L1262F	9	A66:01	EISDRFIGI	153.21
6	A	TP63	p.S458L	10	A01:03	QTSIQSPSLY	35.69
6	A	TP63	p.S458L	9	A01:03	TSIQSPSLY	124.26
6	B	DNMT3A	p.E865K	10	B08:01	EMKRVFGFPV	119.36
6	B	PDE1C	p.L121F	10	A01:03	VVDFKKNLEY	18.48
6	B	PISD	NeoORF	9	B08:01	AAQARLQPV	101.2
6	B	TEX2	p.P207L	9	B08:01	HLARHRHLM	43.81
6	B	TEX2	p.P207L	9	A66:01	HLARHRHLM	312.21
6	B	TEX2	p.P207L	10	B08:01	SPHLARHRHL	418.49
6	B	DCUN1D4	p.E325K	9	A01:03	LLDKFVEWY	49.75
6	C	CADM4	NeoORF	10	B08:01	MPAWRTRGAI	122.56
6	C	CADM4	p.V87fs	9	B08:01	MPAWRTRGA	436.54
6	C	DTX4	p.P223L	10	B08:01	LPVTRKNMPL	97.97
6	C	KRIT1	p.R600C	9	A01:03	WTNCILHEY	25.05
6	C	KRIT1	p.R600C	9	A66:01	WTNCILHEY	192.99
6	C	SETBP1	p.P1084S	10	A66:01	HTLGAASSFM	64.87
6	C	SETBP1	p.P1084S	9	A66:01	HTLGAASSF	374.05
6	C	ATP5J2-PTCD1	p.R57Q	9	B08:01	QLFARARPM	53.95
6	D	DNMBP	p.H421Y	10	A01:03	ISSQPQVPFY	120.15
6	D	DNMBP	p.H421Y	9	A01:03	SSQPQVPFY	204.31
6	D	NCOA6	p.P1371R	9	B08:01	NVELRRNVL	110.18
6	D	TBX10	p.D256N	9	A01:03	ESDLNSWPV	34.68
6	D	TNS1	NeoORF	10	B08:01	LPSFRPPTAL	249.23
6	D	TNS1	p.P789fs	9	B08:01	ISIQRAQPL	421.26
6	D	EEA1	p.L1161F	10	A66:01	ESIKEITNFK	49.75
6	D	EEA1	p.L1161F	9	A66:01	SIKEITNFK	424.91
6	D	EEA1	p.L1161F	9	A66:01	ESIKEITNF	468.54

0: negative

1: positive

n.d.: not determined

unizing peptides for Patients 1-6

Wild type peptide		Immunizing peptide		
Sequence	Affinity (nM)	Sequence	ID	EPT peptide ID
ELKFVTLVF	1140.75	DRSVLAKKLKFVTLVFRHGDRSPID	1-IMP04	1-EPT4A
ELKFVTLVF	206.37	DRSVLAKKLKFVTLVFRHGDRSPID	1-IMP04	1-EPT4A
VLAKELKFV	28.52	DRSVLAKKLKFVTLVFRHGDRSPID	1-IMP04	1-EPT4C
FFFQDSKKI	16441.6	NNSKKKWFLFQDSKKIQVEQPQ	1-IMP03	1-EPT3A
NSKKKWFFF	952.95	NNSKKKWFLFQDSKKIQVEQPQ	1-IMP03	1-EPT3C
VQKVASKIPS	11482.99	SPIKLVQKVASKIPFPDRITEESV	1-IMP02	1-EPT2A
VLFASRPRF	76.2	RRGGALFASRPRFTPL	1-IMP12	1-EPT12A
RSLEYLPLRF	126.93	TKRQVILLHTELERFLEYLPLRF	1-IMP07	1-EPT7A
TELERSLEY	64.96	TKRQVILLHTELERFLEYLPLRF	1-IMP07	1-EPT7C
LLHTELERS	20179.31	TKRQVILLHTELERFLEYLPLRF	1-IMP07	1-EPT7D
LLHTELERSL	966.37	TKRQVILLHTELERFLEYLPLRF	1-IMP07	1-EPT7E
TLFHTFYDL	36.32	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6A
TLFHTFYDLL	49.68	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6C
LFHTFYDLLI	200.18	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6D
LFHTFYDLL	331.85	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6E
TTLFHTFYDL	1607.05	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6F
TTLFHTFYDL	1111.13	SHTQTTLFHTFYELLIQKNKHK	1-IMP06	1-EPT6F
KFGDLTDNF	91.84	RLVLGKFGDLTNNFSSPHAR	1-IMP11	1-EPT11A
		LSPREEFLRLCKKIMMRSIQ	1-IMP26	
QLFESKAEL	71.84	EDSDKLFESKAELADHQKF	1-IMP08	1-EPT8A
QLFESKAELA	195.32	EDSDKLFESKAELADHQKF	1-IMP08	1-EPT8C
YNSFSSASM	274.84	PSTANYNSFSSAPMPQIPVASVTPT	1-IMP18	1-EPT18A
SFSSASMPQI	470.86	PSTANYNSFSSAPMPQIPVASVTPT	1-IMP18	1-EPT18C
		LCPREEFLRLCKKIMMRSIQ	1-IMP17	
GIPGNSFNV	146.84	SHNELADSGIPENSFNVSSLVE	1-IMP10	1-EPT10A
SVGDSSQEF	256.71	SGSPPLRVSVGDFSQEFSPIQEAQQD	1-IMP19	1-EPT19A
VSVGDSSQEF	211.44	SGSPPLRVSVGDFSQEFSPIQEAQQD	1-IMP19	1-EPT19B
		RPAGRTQLLWTPAAPTAMAEVGPGHTP	2-IMP02	2-EPT2A
		DGGRQHSGPRRHSGAGPKPSSSEWAVCWAP	2-IMP29	
FPGNRWNPV	50	KHLPGVNFPGNQWNPVEGILPS	2-IMP12	2-EPT12A
LADFGLARLY	10.52	RGQIKLADFRLARLYSSEESR	2-IMP09	2-EPT9A
NHDETSSLL	15	LENNANHDETSFLLPRKESNIVD	2-IMP08	2-EPT8A
		WTPAAPTAMAEVGPGHTPAHPSQGAVPP	2-IMP03	2-EPT3A
NA	NA	WTPAAPTAMAEVGPGHTPAHPSQGAVPP	2-IMP03	2-EPT3D
		PAHPSQGAVPPSRAAAEPHLKPSPSELQTA	2-IMP23	
VTEKLQLTY	5.06	LGETMGQVTEKLQPTYMEET	2-IMP15	2-EPT15A
LPAPPAPPPA	5	PAPPPAVPKEHPAPPAPPPASAPTP	2-IMP14	2-EPT14A
VPKELPAPPA	0.25 (%rank)	PAPPPAVPKEHPAPPAPPPASAPTP	2-IMP14	2-EPT14C
		DEQGREAELARSGPSAAGPVRLKPGLVPGL	2-IMP24	

		AAVRPEQRPAARGSRV	2-IMP04	2-EPT4A
FPKEIQMLA	40	TFPKKIQMLARDFLDEY	2-IMP19	2-EPT19A
SLDREQRESY	87.93	PETGEIQVKTFLDREQRESYELKV	2-IMP16	2-EPT16A
SPAAAFPTA	25	VTSPKASPVTFPAAAFPTASPANKD	2-IMP07	2-EPT7A
SPVTSPAAA	0.30 (%rank)	VTSPKASPVTFPAAAFPTASPANKD	2-IMP07	2-EPT7C
SPAAAFPTAS	1.50 (%rank)	VTSPKASPVTFPAAAFPTASPANKD	2-IMP07	2-EPT7D
ITAAHELGV	2938.79	PGGDSGELITDAHELGVAHPPGY	2-IMP06	2-EPT6A
ITAAHELGVA	6471.66	PGGDSGELITDAHELGVAHPPGY	2-IMP06	2-EPT6D
YTWPSGNTY	74.9	EVVGGYTWPSGNIYQGYWAQGKR	2-IMP20	2-EPT20A
		TIKNSDKNVVLEHFG	2-IMP28	
VLPSLVLVPL	54.32	SLPSNVLSSLVLVPLHTTPK	3-IMP16	3-EPT16A
NVLPSLVLV	63.74	SLPSNVLSSLVLVPLHTTPK	3-IMP16	3-EPT16C
SLPSNVLPSL	45.43	SLPSNVLSSLVLVPLHTTPK	3-IMP16	3-EPT16D
EIIAYQPYGK	2067.7	FCGTPDYIAPKIIAYQPYGKSVD	3-IMP03	3-EPT3A
RLMLRRVALK	20.5	TRNSFALVPSLQRLMLRKVALKNVDSSPS	3-IMP19	3-EPT19A
QRLMLRRVAL	47.69	TRNSFALVPSLQRLMLRKVALKNVDSSPS	3-IMP19	3-EPT19C
RLMLRRVAL	270.69	TRNSFALVPSLQRLMLRKVALKNVDSSPS	3-IMP19	3-EPT19D
SLQRLMLRRV	479.4	TRNSFALVPSLQRLMLRKVALKNVDSSPS	3-IMP19	3-EPT19E
VLQSQSISLV	33.62	SSHYKFSKPALQSQSISLVQQS	3-IMP18	3-EPT18A
VLQSQSISL	127.32	SSHYKFSKPALQSQSISLVQQS	3-IMP18	3-EPT18C
YLLFQDTDL	91.02	TETVNHHYLLFQNTDLGSFHDLLR	3-IMP25	3-EPT25A
APSPDGSIRK	18276.17	DRASFLLTDYALSPDGSIRKATG	3-IMP06	3-EPT6A
FLLTDYAPS	61.8	DRASFLLTDYALSPDGSIRKATG	3-IMP06	3-EPT6C
LLSAPEYGPK	107.59	NLKAPRLLFAPEYGPKLKLRALEDRHS	3-IMP22	3-EPT22A
WRNILLLPLH	54.85	ERFWRNILLLSLHKGSLYPRIPGLGKE	3-IMP27	3-EPT27A
PLHKGSLYPR	4822.58	ERFWRNILLLSLHKGSLYPRIPGLGKE	3-IMP27	3-EPT27C
TPLSQVNKV	34399.46	RGRLPAGAVRTLLSQVNKVWDQSS	3-IMP04	3-EPT4A
VRTPLSQVNK	301.94	RGRLPAGAVRTLLSQVNKVWDQSS	3-IMP04	3-EPT4C
RTAPRPGSQE	16312.37	SPGPRTAPRPGSQKQAGKDWQ	3-IMP07	3-EPT7A
SLLRAASFGK	32.95	GHEHQPDMQKSLLRAAFFGKCFLDR	3-IMP17	3-EPT17A
LRAASFGKCF	338.47	GHEHQPDMQKSLLRAAFFGKCFLDR	3-IMP17	3-EPT17C
LRFNLTANQH	135.09	ELQYRGRELRFNLIANQHLLAPGFVSETR	3-IMP30	3-EPT30A
KLNSRLFVI	16.36	EDLDANLRKLNFRLFVIRGQPAD	3-IMP26	3-EPT26A
RKLNSRLFVI	422.06	EDLDANLRKLNFRLFVIRGQPAD	3-IMP26	3-EPT26C
KLNSRLFVIR	262.14	EDLDANLRKLNFRLFVIRGQPAD	3-IMP26	3-EPT26D
RIHTGEKPFK	108.34	HASHLQEHQRIYTGEKPFKCDT	3-IMP14	3-EPT14A
FGAEFTQVA	20395.4	GHQKLPGKIHLFEAEFTQVAKKEPDG	4-IMP13	4-EPT13A
		KMQRRNDDKSILMHGLVSLRESSRG	4-IMP02	4-EPT2A
NA	NA	KMQRRNDDKSILMHGLVSLRESSRG	4-IMP02	4-EPT2E
NA	NA	KMQRRNDDKSILMHGLVSLRESSRG	4-IMP02	4-EPT2G
		STLPVISDSTTKRRWSALVIGL	4-IMP01	4-EPT1A
NA	NA	STLPVISDSTTKRRWSALVIGL	4-IMP01	4-EPT1C
NA	NA	STLPVISDSTTKRRWSALVIGL	4-IMP01	4-EPT1H
NA	NA	STLPVISDSTTKRRWSALVIGL	4-IMP01	4-EPT1I
YMAPEVVEV	2.08	TTPSGSAEYMASEVVEVFTDQAT	4-IMP15	4-EPT15A

YMAPEVVEVF	215.93	TTPSGSAEYMASEVVEVFTDQAT	4-IMP15	4-EPT15B
DEQMESMTY	10	MSQDIKKADEQIESMTYSTERKT	4-IMP20	4-EPT20A
		TTVTHERKQAKVVNPPIQEVGKGARK	4-IMP03	4-EPT3A
NA	NA	TTVTHERKQAKVVNPPIQEVGKGARK	4-IMP03	4-EPT3A
FMMPRIVNV	1.79	PENDDLFMMPRIVDVTSLATEGG	4-IMP17	4-EPT17A
FMMPRIVNVT	16.54	PENDDLFMMPRIVDVTSLATEGG	4-IMP17	4-EPT17B
		KGEKNGMTFSSTKDYVNNV	4-IMP04	4-EPT4A
NEVPEVTVF	26.75	RYNSTAATNEVSEVTVFSKSPVT	4-IMP25	4-EPT25A
SQFARVPGFV	58.86	GRMSPSQFARVPGYVGSPLAAMNPK	4-IMP30	4-EPT30A
FVGSPLAAM	1.00 (%rank)	GRMSPSQFARVPGYVGSPLAAMNPK	4-IMP30	4-EPT30B
SQFARVPGF	0.20 (%rank)	GRMSPSQFARVPGYVGSPLAAMNPK	4-IMP30	4-EPT30C
RLVDLLPST	41.39	DGVSEEFWLVDLLPSTHYT	4-IMP21	4-EPT21A
EEFRLVDLL	125.21	DGVSEEFWLVDLLPSTHYT	4-IMP21	4-EPT21C
EEFRLVDLLP	1108.99	DGVSEEFWLVDLLPSTHYT	4-IMP21	4-EPT21D
HLYAYHEEP	5957.75	DSYHLYAYHEELSATVPSQWKKIG	4-IMP10	4-EPT10A
EEPSATVPS	2496.26	DSYHLYAYHEELSATVPSQWKKIG	4-IMP10	4-EPT10B
EEPSATVPSQ	6128.55	DSYHLYAYHEELSATVPSQWKKIG	4-IMP10	4-EPT10C
FVADRAGTF	40.001	GDQYKATDFVADWAGTFKMVFTPKDGSG	4-IMP14	4-EPT14A
EESGGAVAFS	1086.15	SLTEESGGAVAFFPGNLSTSSSA	4-IMP08	4-EPT8A
ESGGAVAFS	16.00 (%rank)	SLTEESGGAVAFFPGNLSTSSSA	4-IMP08	4-EPT8B
IPLSDNTIS	1437.36	KLRTIPLSDNTIFRRICTIAKHLE	5-IMP05	5-EPT5A
REFDEIELA	180.19	PASAKSRREFDKIELAYRR	5-IMP23	5-EPT23A
REFDEIELAY	587.96	PASAKSRREFDKIELAYRR	5-IMP23	5-EPT23C
		SHHTHSYQRYSHPLFLPGHRLDPPI	5-IMP01	5-EPT1A
IYPHGSTDKL	119.28	DVTGPHLYSIYLHGSTDKLPYVTMGS	5-IMP17	5-EPT17A
YPVISKSIM	18.76	ARLQSKEYPVIFKSIMRQRLISPQL	5-IMP16	5-EPT16A
KEYPVISKSI	68.04	ARLQSKEYPVIFKSIMRQRLISPQL	5-IMP16	5-EPT16C
EYPVISKSI	495.76	ARLQSKEYPVIFKSIMRQRLISPQL	5-IMP16	5-EPT16D
ISKSIMRQRL	9605.46	ARLQSKEYPVIFKSIMRQRLISPQL	5-IMP16	5-EPT16E
YDHVSALHPV	167.71	LHTHYDYVSALHPVSTPSKEYTSA	5-IMP28	5-EPT28A
HTHYDHVSAL	181.9	LHTHYDYVSALHPVSTPSKEYTSA	5-IMP28	5-EPT28C
DHVSALHPV	17304.51	LHTHYDYVSALHPVSTPSKEYTSA	5-IMP28	5-EPT28D
FPQGLPDEY	6.01	FPVVQSTEDVFPQGLPNEYAFVT	5-IMP11	5-EPT11A
LPDEYAFVTT	382.06	FPVVQSTEDVFPQGLPNEYAFVT	5-IMP11	5-EPT11C
LPDEYAFVT	418.9	FPVVQSTEDVFPQGLPNEYAFVT	5-IMP11	5-EPT11D
DEYAFVTTF	1456.57	FPVVQSTEDVFPQGLPNEYAFVT	5-IMP11	5-EPT11E
QGLPDEYAF	2258.5	FPVVQSTEDVFPQGLPNEYAFVT	5-IMP11	5-EPT11F
ALPRSILLF	58.45	SDAFSGLTALPQSILLFGP	5-IMP25	5-EPT25A
TALPRSILLF	57.48	SDAFSGLTALPQSILLFGP	5-IMP25	5-EPT25C
TALPRSILLF	407.98	SDAFSGLTALPQSILLFGP	5-IMP25	5-EPT25C
SPVSRSHSF	22.16	SHLASLKNNVSPVLRSHSFSDPSPKFA	5-IMP18	5-EPT18A
		SHQIHSYQLYTHPLLHPWDHRD	5-IMP02	5-EPT2A
LFANPRDSF	130.57	SSPLGRANGRRFANPRDSFSAMGFQR	5-IMP29	5-EPT29A
TIIDNIEEM	55.29	STQHADLTIIDNIKEMNFLRRYK	5-IMP26	5-EPT26A
LSSPGAANLF	2033.83	ASATEPANDSLFSPGAANLFSTYLAR	5-IMP07	5-EPT7A
SSPGAANLF	331.43	ASATEPANDSLFSPGAANLFSTYLAR	5-IMP07	5-EPT7C

QPPAPSPSY	106.29	TAQFAPSPGQPPALSPSYPGHRLPLQQG	5-IMP22	5-EPT22A
APSPGQPPAP	7569.25	TAQFAPSPGQPPALSPSYPGHRLPLQQG	5-IMP22	5-EPT22C
FPSQRTSWGF	9.79	AASAAAFPSQRTSWEFLQSLVSIKQEK	5-IMP12	
MPFTTVSELV	99.13	GSVLQFMPFTTVSELMKVSAMSSPKV	5-IMP13	5-EPT13A
SELVKVSAM	49.31	GSVLQFMPFTTVSELMKVSAMSSPKV	5-IMP13	5-EPT13C
		DKGHQFHVHPLLHSGDDLDP	5-IMP03	5-EPT3A
MTITPRGTTV	100.08	EIHGKCENMTITSRGTTVTPTKETVSLG	5-IMP30	5-EPT30A
RYGIRGFPTI	8.06	NQVLASRYGIRGFSTIKIFQKGESPV	5-IMP14	5-EPT14A
YGIRGFPTI	40.59	NQVLASRYGIRGFSTIKIFQKGESPV	5-IMP14	5-EPT14C
MAGPEGFQY	60.65	MAGPKGFQYRALYPFRRER	5-IMP24	5-EPT24A
DMKARQEAL	16.55	VTLNDMKARQKALVRERERQLA	6-IMP18	6-EPT18A
DMKARQEALV	310.25	VTLNDMKARQKALVRERERQLA	6-IMP18	6-EPT18B
TRKNKKLAP	11353.17	SRLQTRKNKKLALSSTPSNIAPSD	6-IMP06	6-EPT6A
QTRKNKKLAP	12475.27	SRLQTRKNKKLALSSTPSNIAPSD	6-IMP06	6-EPT6B
		LNTGLFRIKFKEPLENLI	6-IMP02	6-EPT2A
ISDRLIGIY	9.37	SLRNNMFEISDRFIGIYKTYNITK	6-IMP17	6-EPT17A
EISDRLIGIY	30.86	SLRNNMFEISDRFIGIYKTYNITK	6-IMP17	6-EPT17B
EISDRLIGI	206.72	SLRNNMFEISDRFIGIYKTYNITK	6-IMP17	6-EPT17C
QTSIQSPSSY	166.67	HLLQKQTSIQSPSLYGNSSPPLNK	6-IMP24	6-EPT24A
TSIQSPSSY	839.46	HLLQKQTSIQSPSLYGNSSPPLNK	6-IMP24	6-EPT24B
EMERVFGFPV	2362.67	WCTEMKRVFGFPVHYTDVSNMS	6-IMP07	6-EPT7A
VVDLKKNLEY	23.5	VKQLERGEASVVDFKKNLEYAAT	6-IMP19	6-EPT19A
		SPQSGGAATLAAQARLQPVHLDVWGEHERG	6-IMP03	6-EPT3A
HPARHRHLM	221.14	STEVEPKESPHLARHRHLMKTLVKSLST	6-IMP25	6-EPT25A
HPARHRHLM	3969.44	STEVEPKESPHLARHRHLMKTLVKSLST	6-IMP25	6-EPT25A
SPHPARHRHL	752.03	STEVEPKESPHLARHRHLMKTLVKSLST	6-IMP25	6-EPT25F
LLDEFVEWY	34.84	DGAWPVLLDKFVEWYKDKQMS	6-IMP28	6-EPT28A
		GSGSQMPAWRTRGAISASSTQKTPTTRL	6-IMP04	6-EPT4A
NA	NA	GSGSQMPAWRTRGAISASSTQKTPTTRL	6-IMP04	6-EPT4B
LPVTRKNMPP	3753.14	GPLQLPVTRKNMPLPGVVKLPPLPGS	6-IMP08	6-EPT8A
WTNRILHEY	13.06	TKLKSKAPHWTNCILHEYKNLSTS	6-IMP21	6-EPT21A
WTNRILHEY	145.42	TKLKSKAPHWTNCILHEYKNLSTS	6-IMP21	6-EPT21A
HTLGAASPFM	124.75	YLSHTLGAASSFMRPTVPPPQF	6-IMP13	6-EPT13A
HTLGAASPF	168.38	YLSHTLGAASSFMRPTVPPPQF	6-IMP13	6-EPT13B
RLFARARPM	54.73	TGKPEMDFVRLAQLFARARPMGLF	6-IMP30	6-EPT30A
ISSQPQVPFH	8049.34	VNGISSQPQVPFYPNLQKSQYYSTV	6-IMP11	6-EPT11A
SSQPQVPFH	14408.59	VNGISSQPQVPFYPNLQKSQYYSTV	6-IMP11	6-EPT11B
NVELPRNVL	2944.14	ALLQNVELRRNVLVSPTPLAN	6-IMP10	6-EPT10A
ESDLDSWPV	54.91	FAKGFRESDLNSWPVAPRPLLSV	6-IMP23	6-EPT23A
		GLTRISIQRAQPLPPCLPSFRPPTALQGLS	6-IMP05	6-EPT5A
NA	NA	GLTRISIQRAQPLPPCLPSFRPPTALQGLS	6-IMP05	6-EPT5D
ESIKEITNLK	81.39	SHKLESIKEITNFKDAKQLL	6-IMP29	6-EPT29A
SIKEITNLK	688.17	SHKLESIKEITNFKDAKQLL	6-IMP29	6-EPT29B
ESIKEITNL	667.2	SHKLESIKEITNFKDAKQLL	6-IMP29	6-EPT29C

Gene expression (TPM)	CD8+ T cell reactivity by IFN-g ELISPOT against		
	Peptide pulsed autologous APC	Minigene expressing autologous B cell	Autoloogus tumor
1.27	1	1	0
1.27	1	1	0
1.27	0	n.d.	n.d.
0.58	0	n.d.	n.d.
0.58	0	n.d.	n.d.
16.67	0	n.d.	n.d.
2.78	0	n.d.	n.d.
16.02	1	1	0
16.02	0	n.d.	n.d.
16.02	0	n.d.	n.d.
16.02	0	n.d.	n.d.
2.26	0	n.d.	n.d.
2.26	0	n.d.	n.d.
2.26	0	n.d.	n.d.
2.26	0	n.d.	n.d.
2.26	0	n.d.	n.d.
2.26	0	n.d.	n.d.
11.09	0	n.d.	n.d.
1.02	n.d.	n.d.	n.d.
1.33	0	n.d.	n.d.
1.33	0	n.d.	n.d.
103.21	0	n.d.	n.d.
103.21	0	n.d.	n.d.
1.02	n.d.	n.d.	n.d.
239.78	0	n.d.	n.d.
6.67	0	n.d.	n.d.
6.67	0	n.d.	n.d.
2.23	0	n.d.	n.d.
2.23	n.d.	n.d.	n.d.
4.97	0	n.d.	n.d.
35.26	0	n.d.	n.d.
2.27	0	n.d.	n.d.
2.23	0	n.d.	n.d.
2.23	0	n.d.	n.d.
2.23	n.d.	n.d.	n.d.
21.78	1	1	0
151.61	0	n.d.	n.d.
151.61	0	n.d.	n.d.
2.23	n.d.	n.d.	n.d.

51.89	0	n.d.	n.d.
277.14	1	1	1
8.47	0	n.d.	n.d.
38.85	0	n.d.	n.d.
38.85	0	n.d.	n.d.
38.85	0	n.d.	n.d.
4.97	0	n.d.	n.d.
4.97	0	n.d.	n.d.
2.81	0	n.d.	n.d.
8.90	n.d.	n.d.	n.d.
13.58	0	n.d.	n.d.
13.58	0	n.d.	n.d.
13.58	0	n.d.	n.d.
0.89	0	n.d.	n.d.
5.13	0	n.d.	n.d.
5.13	0	n.d.	n.d.
5.13	0	n.d.	n.d.
5.13	0	n.d.	n.d.
0.54	0	n.d.	n.d.
0.54	0	n.d.	n.d.
61.30	0	n.d.	n.d.
0.28	0	n.d.	n.d.
0.28	0	n.d.	n.d.
38.98	0	n.d.	n.d.
100.74	1	1	0
100.74	0	n.d.	n.d.
2.83	0	n.d.	n.d.
2.83	1	1	0
5.01	0	n.d.	n.d.
36.88	0	n.d.	n.d.
36.88	1	1	0
2.92	0	n.d.	n.d.
39.59	0	n.d.	n.d.
39.59	0	n.d.	n.d.
39.59	0	n.d.	n.d.
5.21	0	n.d.	n.d.
1.91	0	n.d.	n.d.
6.35	1	1	0
6.35	0	n.d.	n.d.
6.35	0	n.d.	n.d.
6.35	0	n.d.	n.d.
6.35	1	1	0
6.35	0	n.d.	n.d.
6.35	0	n.d.	n.d.
2.36	0	n.d.	n.d.

2.36	0	n.d.	n.d.
5.34	0	n.d.	n.d.
6.35	0	n.d.	n.d.
6.35	0	n.d.	n.d.
4.04	0	n.d.	n.d.
4.04	0	n.d.	n.d.
1.70	0	n.d.	n.d.
43.37	0	n.d.	n.d.
9.84	0	n.d.	n.d.
9.84	0	n.d.	n.d.
9.84	0	n.d.	n.d.
0.20	0	n.d.	n.d.
0.20	0	n.d.	n.d.
0.20	0	n.d.	n.d.
4.93	0	n.d.	n.d.
4.93	0	n.d.	n.d.
4.93	0	n.d.	n.d.
4.96	0	n.d.	n.d.
1.50	0	n.d.	n.d.
1.50	0	n.d.	n.d.
1.15	1	1	0
3.52	0	n.d.	n.d.
3.52	1	1	0
0.03	0	n.d.	n.d.
23.45	0	n.d.	n.d.
0.84	1	1	0
0.84	0	n.d.	n.d.
0.84	0	n.d.	n.d.
0.84	0	n.d.	n.d.
0.35	0	n.d.	n.d.
0.35	0	n.d.	n.d.
0.35	0	n.d.	n.d.
10.68	1	0	0
10.68	1	1	0
10.68	1	1	0
10.68	0	n.d.	n.d.
10.68	0	n.d.	n.d.
1.45	0	n.d.	n.d.
1.45	0	n.d.	n.d.
1.45	0	n.d.	n.d.
84.58	0	n.d.	n.d.
0.03	0	n.d.	n.d.
9.65	0	n.d.	n.d.
1.70	0	n.d.	n.d.
10.43	0	n.d.	n.d.
10.43	0	n.d.	n.d.

8.44	0	n.d.	n.d.
8.44	0	n.d.	n.d.
12.40	n.d.	n.d.	n.d.
8.66	0	n.d.	n.d.
8.66	0	n.d.	n.d.
0.03	0	n.d.	n.d.
0.64	0	n.d.	n.d.
54.95	0	n.d.	n.d.
54.95	0	n.d.	n.d.
17.74	0	n.d.	n.d.
4.82	0	n.d.	n.d.
4.82	1	1	0
45.97	0	n.d.	n.d.
45.97	0	n.d.	n.d.
37.52	1	1	0
34.73	0	n.d.	n.d.
34.73	0	n.d.	n.d.
34.73	0	n.d.	n.d.
5.27	0	n.d.	n.d.
5.27	0	n.d.	n.d.
7.57	0	n.d.	n.d.
11.65	0	n.d.	n.d.
8.27	0	n.d.	n.d.
23.40	0	n.d.	n.d.
23.40	0	n.d.	n.d.
23.40	0	n.d.	n.d.
6.50	0	n.d.	n.d.
14.27	0	n.d.	n.d.
14.27	0	n.d.	n.d.
12.79	0	n.d.	n.d.
43.27	0	n.d.	n.d.
43.27	0	n.d.	n.d.
41.28	0	n.d.	n.d.
41.28	0	n.d.	n.d.
NA	0	n.d.	n.d.
9.56	0	n.d.	n.d.
9.56	0	n.d.	n.d.
20.76	0	n.d.	n.d.
0.15	0	n.d.	n.d.
89.05	0	n.d.	n.d.
89.05	0	n.d.	n.d.
50.90	0	n.d.	n.d.
50.90	0	n.d.	n.d.
50.90	0	n.d.	n.d.