

Supmentary table 1: gene information for the interaction gene with PD-1/PD-L1/PD-L2

gene	interGene	ensembl id	chromosome		start	end	band
JAK2	PD-L1/PD-L2	ENSG00000096968		9	4984390	5129948	p24.1
CD44	PD-L1/PD-L2	ENSG00000026508		11	35138870	35232402	p13
NCAM1	PD-L1/PD-L2	ENSG00000149294		11	112961247	113278436	q23.2
ITPKB	PD-L1/PD-L2	ENSG00000143772		1	226631690	226739323	q42.12
FAS	PD-L1/PD-L2	ENSG00000026103		10	88990531	89017059	q23.31
EMR1	PD-L1/PD-L2	ENSG00000174837		19	6887577	6940470	p13.3
PDGFRB	PD-L1/PD-L2	ENSG00000113721		5	150113839	150155872	q32
TIGIT	PD-1	ENSG00000181847		3	114276913	114310288	q13.31
IDO1	PD-1	ENSG00000131203		8	39902275	39928790	p11.21
EOMES	PD-1	ENSG00000163508		3	27715949	27722711	p24.1
TNFRSF4	PD-1	ENSG00000186827		1	1211340	1214153	p36.33
CD52	PD-1	ENSG00000169442		1	26317958	26320523	p36.11
CD19	PD-1	ENSG00000177455		16	28931965	28939342	p11.2
CD40LG	PD-1	ENSG00000102245	X		136648158	136660390	q26.3
PRDM1	PD-1	ENSG00000057657		6	105993463	106109939	q21
IRF4	PD-1	ENSG00000137265		6	391752	411443	p25.3
HLA-DQB1	PD-1	ENSG00000179344		6	32659467	32668383	p21.32
ITGA4	PD-1	ENSG00000115232		2	181457202	181538940	q31.3
CD5	PD-1	ENSG00000110448		11	61102489	61127852	q12.2
PTPN6	PD-1	ENSG00000111679		12	6946468	6961316	p13.31
SH2D1A	PD-1	ENSG00000183918	X		124227868	124373197	q25
CXCR4	PD-1	ENSG00000121966		2	136114349	136118149	q22.1
CD2	PD-1	ENSG00000116824		1	116754430	116769229	p13.1
CD3G	PD-1	ENSG00000160654		11	118344344	118355161	q23.3

CD8A	PD-1	ENSG00000153563		2	86784610	86808396	p11.2
LCK	PD-1	ENSG00000182866		1	32251239	32286165	p35.2
PTPRC	PD-1	ENSG00000262418	CHR_HSCHR1_3_CTG31		198650158	198733963	
CXCL9	PD-1	ENSG00000138755		4	76001275	76007509	q21.1
CXCR3	PD-1	ENSG00000186810	X		71615916	71618511	q13.1
PRF1	PD-1	ENSG00000180644		10	70597348	70602759	q22.1
CD247	PD-1	ENSG00000198821		1	167430640	167518610	q24.2
FASLG	PD-1	ENSG00000117560		1	172659103	172666876	q24.3
CD3E	PD-1	ENSG00000198851		11	118304730	118316175	q23.3
CD200	PD-1	ENSG00000091972		3	112332347	112362812	q13.2
ITPKB	PD-1	ENSG00000143772		1	226631690	226739323	q42.12
EMR1	PD-1	ENSG00000174837		19	6887577	6940470	p13.3
IL10RA	PD-1	ENSG00000110324		11	117986370	118003037	q23.3
CD276	PD-1	ENSG00000103855		15	73683966	73714514	q24.1
CD83	PD-1	ENSG00000112149		6	14117256	14136918	p23
TLR4	PD-1	ENSG00000136869		9	117704175	117724735	q33.1
CD27	PD-1	ENSG00000139193		12	6444867	6451718	p13.31
CD69	PD-1	ENSG00000110848		12	9752486	9760901	p13.31
NCAM1	PD-1	ENSG00000149294		11	112961247	113278436	q23.2
NCR3	PD-1	ENSG00000237808	CHR_HSCHR6_MHC_COX_CTG1		31576297	31580387	
SELL	PD-1	ENSG00000188404		1	169690665	169711702	q24.2
CD44	PD-1	ENSG00000026508		11	35138870	35232402	p13

PD-1: Programmed death 1; PD-L1: Programmed death ligand 1; PD-L2: Programmed death ligand 2.