

Table SI - Gene List - Oncomine Immune Response Research Assay

Gene	Target	NCBI NAME	NCBI ACCESSION	GENE FUNCTION
ABCF1	ABCF1_11741283	ATP_binding_cassette_subfamily_F_member_1	NM_001025091	Housekeeping
ADGRE5	ADGRE5_26552764	adhesion_G_protein-coupled_receptor_E5	NM_078481	Adhesion, migration
ADORA2A	ADORA2A_771873	adenosine_A2a_receptor	NM_000675	Checkpoint pathway
AIF1	AIF1_385491	allograft_inflammatory_factor_1	NM_001623	Macrophage
AKT1	AKT1_358467	AKT_serine_threonine_kinase_1	NM_001014431	Tumor marker
ALOX15B	ALOX15B_13391445	arachidonate_15-lipoxygenase_type_B	NM_001141	Macrophage
ARG1	ARG1_174278	arginase_1	NM_000045	Myeloid marker
AXL	AXL_24872596	AXL_receptor_tyrosine_kinase	NM_021913	Innate immune response
B3GAT1	B3GAT1_170280	beta-13-glucuronyltransferase_1	NM_018644	NK activation
BAGE	BAGE_153290	B_melanoma_antigen	NM_182482	Tumor antigen
BATF	BATF_237345	basic_leucine_zipper_ATF-like_transcription_factor	NM_006399	Helper T cells
BCL2	BCL2_10401144	B-cell_CLL_lymphoma_2	NM_000633	Apoptosis
BCL2L11	BCL2L11_620729	BCL2_like_11	NM_138621	Apoptosis
BCL6	BCL6_21502257	B-cell_CLL_lymphoma_6	NM_001706	Type II interferon signaling
BRCA1	BRCA1_42344338	BRCA1_DNA_repair_associated	NM_007300	Tumor marker
BRCA2	BRCA2_98179922	BRCA2_DNA_repair_associated	NM_000059	Tumor marker

BST2	BST2_218322	bone_marrow_stromal_cell_antigen_2	NM_004335	Type I interferon signaling
BTLA	BTLA_227334	B_and_T_lymphocyte_associated	NM_181780	Checkpoint pathway
BUB1	BUB1_701803	BUB1_mitotic_checkpoint_serine_threonine_kinase	NM_004336	Proliferation
C10orf54	C10orf54_562672	chromosome_10_open_reading_frame_54	NM_022153	Checkpoint pathway
C1QA	C1QA_67171	complement_component_1_q_subcomponent_A_chain	NM_015991	Innate immune response
C1QB	C1QB_111199	complement_component_1_q_subcomponent_B_chain	NM_000491	Innate immune response
CA4	CA4_420530	carbonic_anhydrase_4	NM_000717	Neutrophil
CBLB	CBLB_296407	Cbl_proto-oncogene_B	NM_170662	T cell receptor signaling
CCL17	CCL17_288394	C-C_motif_chemokine_ligand_17	NM_002987	Chemokine signaling
CCL18	CCL18_198296	C-C_motif_chemokine_ligand_18	NM_002988	Lymphocyte infiltrate
CCL2	CCL2_242346	C-C_motif_chemokine_ligand_2	NM_002982	Lymphocyte infiltrate
CCL20	CCL20_297403	C-C_motif_chemokine_ligand_20	NM_004591	Chemokine signaling
CCL21	CCL21_432539	C-C_motif_chemokine_ligand_21	NM_002989	Lymphocyte infiltrate
CCL22	CCL22_79185	C-C_motif_chemokine_ligand_22	NM_002990	Chemokine signaling
CCL3	CCL3_238343	C-C_motif_chemokine_ligand_3	NM_002983	Lymphocyte infiltrate
CCL4	CCL4_121220	C-C_motif_chemokine_ligand_4	NM_002984	Lymphocyte infiltrate
CCL5	CCL5_110219	C-C_motif_chemokine_ligand_5	NM_002985	Lymphocyte infiltrate
CCNB2	CCNB2_9861095	cyclin_B2	NM_004701	Proliferation
CCR1	CCR1_54149	C-C_motif_chemokine_receptor_1	NM_001295	Cytokine signaling
CCR2	CCR2_385483	C-C_motif_chemokine_receptor_2	NM_001123396	Helper T cells
CCR4	CCR4_76182	C-C_motif_chemokine_receptor_4	NM_005508	Chemokine signaling
CCR5	CCR5_85193	C-C_motif_chemokine_receptor_5_gene_pseudogene	NM_001100168	Lymphocyte infiltrate
CCR6	CCR6_271363	C-C_motif_chemokine_receptor_6	NM_004367	Chemokine signaling
CCR7	CCR7_133237	C-C_motif_chemokine_receptor_7	NM_001838	TCR coexpression

CD14	CD14_329435	CD14_molecule	NM_000591	Dendritic cell, macrophage
CD160	CD160_194300	CD160_molecule	NM_007053	Checkpoint pathway
CD163	CD163_214222 45	CD163_molecule	NM_004244	Macrophage
CD19	CD19_1201131 7	CD19_molecule	NM_001178098	B cell marker
CD1C	CD1C_1253135 7	CD1c_molecule	NM_001765	Antigen presentation
CD1D	CD1D_1066117 3	CD1d_molecule	NM_001766	Antigen presentation
CD2	CD2_350452	CD2_molecule	NM_001767	Lymphocyte infiltrate
CD209	CD209_992110 1	CD209_molecule	NM_021155	Dendritic cell, macrophage
CD22	CD22_1025113 2	CD22_molecule	NM_001771	B cell marker
CD226	CD226_902100 6	CD226_molecule	NM_006566	Adhesion, migration
CD244	CD244_868973	CD244_molecule	NM_001166663	Checkpoint pathway
CD247	CD247_152252	CD247_molecule	NM_198053	TCR coexpression
CD27	CD27_409517	CD27_molecule	NM_001242	Drug target
CD274	CD274_461569	CD274_molecule	NM_014143	Checkpoint pathway
CD276	CD276_120113 10	CD276_molecule	NM_001024736	Checkpoint pathway
CD28	CD28_601704	CD28_molecule	NM_006139	Checkpoint pathway
CD33	CD33_387493	CD33_molecule	NM_001772	Myeloid marker
CD37	CD37_496605	CD37_molecule	NM_001774	Lymphocyte infiltrate
CD38	CD38_519628	CD38_molecule	NM_001775	Adhesion, migration
CD3D	CD3D_400503	CD3d_molecule	NM_000732	TCR coexpression
CD3E	CD3E_677780	CD3e_molecule	NM_000733	TCR coexpression

CD3G	CD3G_616717	CD3g_molecule	NM_000073	TCR coexpression
CD4	CD4_147255	CD4_molecule	NM_000616	Helper T cells
CD40	CD40_300407	CD40_molecule	NM_001250	Drug target
CD40LG	CD40LG_479579	CD40_ligand	NM_000074	T cell receptor signaling
CD44	CD44_10151123	CD44_molecule_Indian_blood_group	NM_000610	Adhesion, migration
CD47	CD47_826931	CD47_molecule	NM_001777	Adhesion, migration
CD48	CD48_695798	CD48_molecule	NM_001778	Checkpoint pathway
CD52	CD52_70175	CD52_molecule	NM_001803	Lymphocyte infiltrate
CD53	CD53_28133	CD53_molecule	NM_001040033	Adhesion, migration
CD6	CD6_17771886	CD6_molecule	NM_006725	TCR coexpression
CD63	CD63_692800	CD63_molecule	NM_001780	Lymphocyte infiltrate
CD68	CD68_172280	CD68_molecule	NM_001251	Macrophage
CD69	CD69_195303	CD69_molecule	NM_001781	Checkpoint pathway
CD70	CD70_259363	CD70_molecule	NM_001252	Drug target
CD74	CD74_787896	CD74_molecule	NM_001025159	Antigen processing
CD79A	CD79A_184290	CD79a_molecule	NM_001783	B cell receptor signaling
CD79B	CD79B_484590	CD79b_molecule	NM_001039933	B cell receptor signaling
CD80	CD80_457557	CD80_molecule	NM_005191	Checkpoint pathway
CD83	CD83_480580	CD83_molecule	NM_004233	Antigen presentation
CD86	CD86_169267	CD86_molecule	NM_175862	Checkpoint pathway
CD8A	CD8A_14271531	CD8a_molecule	NM_171827	TCR coexpression
CD8B	CD8B_403510	CD8b_molecule	NM_172213	TCR coexpression
CDK1	CDK1_837939	cyclin-dependent_kinase_1	NM_001786	Proliferation
CDKN2A	CDKN2A_696829	cyclin-dependent_kinase_inhibitor_2A	NM_000077	Tumor marker

CDKN3	CDKN3_434534	cyclin-dependent_kinase_inhibitor_3	NM_005192	Proliferation
CEACAM1	CEACAM1_10471155	carcinoembryonic_antigen_related_cell_adhesion_molecule_1	NM_001712	Checkpoint pathway
CEACAM8	CEACAM8_745847	carcinoembryonic_antigen_related_cell_adhesion_molecule_8	NM_001816	Myeloid marker
CIITA	CIITA_294397	class_II_major_histocompatibility_complex_transactivator	NM_000246	Type II interferon signaling
CLEC4C	CLEC4C_322429	C-type_lectin_domain_family_4_member_C	NM_130441	Dendritic cell
CMKLR1	CMKLR1_36143	chemerin_chemokine-like_receptor_1	NM_001142345	Dendritic cell, macrophage
CORO1A	CORO1A_457563	coronin_1A	NM_007074	Lymphocyte infiltrate
CRTAM	CRTAM_312417	cytotoxic_and_regulatory_T-cell_molecule	NM_019604	TCR coexpression
CSF1R	CSF1R_19612067	colony_stimulating_factor_1_receptor	NM_005211	Cytokine signaling
CSF2RB	CSF2RB_11971301	colony_stimulating_factor_2_receptor_beta_common_subunit	NM_000395	Cytokine signaling
CTAG1B	CTAG1B_276373	cancer_testis_antigen_1B	NM_001327	Tumor antigen
CTAG2	CTAG2_407763	cancer_testis_antigen_2	ENST00000369585	Tumor antigen
CTLA4	CTLA4_584689	cytotoxic_T-lymphocyte_associated_protein_4	NM_005214	Drug target
CTSS	CTSS_356460	cathepsin_S	NM_004079	Lymphocyte infiltrate
CX3CL1	CX3CL1_190298	C-X3-C_motif_chemokine_ligand_1	NM_002996	Type II interferon signaling
CX3CR1	CX3CR1_35133	C-X3-C_motif_chemokine_receptor_1	NM_001337	Lymphocyte infiltrate
CX3CR1	CX3CR1_147243	C-X3-C_motif_chemokine_receptor_1	NM_001171172	Lymphocyte infiltrate
CX3CR1	CX3CR1_207292	C-X3-C_motif_chemokine_receptor_1	NM_001171171	Lymphocyte infiltrate

CX3CR1	CX3CR1_58187	C-X3-C_motif_chemokine_receptor_1	NM_001171174	Lymphocyte infiltrate
CXCL1	CXCL1_357459	C-X-C_motif_chemokine_ligand_1	NM_001511	Chemokine signaling
CXCL10	CXCL10_354459	C-X-C_motif_chemokine_ligand_10	NM_001565	Type II interferon signaling
CXCL11	CXCL11_261361	C-X-C_motif_chemokine_ligand_11	NM_005409	Type II interferon signaling
CXCL13	CXCL13_202307	C-X-C_motif_chemokine_ligand_13	NM_006419	Type II interferon signaling
CXCL8	CXCL8_197302	C-X-C_motif_chemokine_ligand_8	NM_000584	Cytokine signaling
CXCL9	CXCL9_149250	C-X-C_motif_chemokine_ligand_9	NM_002416	Type II interferon signaling
CXCR2	CXCR2_379486	C-X-C_motif_chemokine_receptor_2	NM_001557	Chemokine signaling
CXCR3	CXCR3_11138	C-X-C_motif_chemokine_receptor_3	NM_001504	Chemokine signaling
CXCR4	CXCR4_100208	C-X-C_motif_chemokine_receptor_4	NM_003467	Lymphocyte infiltrate
CXCR5	CXCR5_153252	C-X-C_motif_chemokine_receptor_5	NM_001716	Type II interferon signaling
CXCR6	CXCR6_48153	C-X-C_motif_chemokine_receptor_6	NM_006564	Lymphocyte infiltrate
CYBB	CYBB_14221529	cytochrome_b-245_beta_chain	NM_000397	Type II interferon signaling
DDX58	DDX58_540643	DEXD_H-box_helicase_58	NM_014314	Interferon signaling
DGAT2	DGAT2_439548	diacylglycerol_O-acyltransferase_2	NM_032564	Neutrophil
DMBT1	DMBT1_64696575	deleted_in_malignant_brain_tumors_1	NM_007329	Innate immune response
EBI3	EBI3_527636	Epstein-Barr_virus_induced_3	NM_005755	T cell regulation
EFNA4	EFNA4_548649	ephrin_A4	NM_005227	Tumor marker
EGFR	EGFR_31583261	epidermal_growth_factor_receptor	NM_005228	Tumor marker
EGR2	EGR2_454559	early_growth_response_2	NM_000399	T cell differentiation
EGR3	EGR3_411516	early_growth_response_3	NM_004430	Tumor marker

EIF2AK2	EIF2AK2_257357	eukaryotic_translation_initiation_factor_2_alpha_kinase_2	NM_001135651	Type II interferon signaling
ENTPD1	ENTPD1_708815	ectonucleoside_triphosphate_diphosphohydrolase_1	NM_001098175	Checkpoint pathway
EOMES	EOMES_9391044	eomesodermin	NM_005442	Checkpoint pathway
FAS	FAS_473575	Fas_cell_surface_death_receptor	NM_000043	B cell receptor signaling
FASLG	FASLG_417521	Fas_ligand	NM_000639	Type II interferon signaling
FCER1G	FCER1G_31138	Fc_fragment_of_IgE_receptor_Ig	NM_004106	Lymphocyte infiltrate
FCGR1A	FCGR1A_547652	Fc_fragment_of_IgG_receptor_Ia	NM_000566	B cell marker
FCGR2B	FCGR2B_792903	Fc_fragment_of_IgG_receptor_IIb	NM_004001	B cell marker
FCGR3A	FCGR3A_575682	Fc_fragment_of_IgG_receptor_IIIa	NM_000569	Macrophage
FCGR3B	FCGR3B_620722	Fc_fragment_of_IgG_receptor_IIIb	NM_000570	NK activation
FCRLA	FCRLA_710815	Fc_receptor_like_A	NM_001184866	B cell marker
FOXM1	FOXM1_10551166	forkhead_box_M1	NM_021953	Proliferation
FOXO1	FOXO1_9761081	forkhead_box_O1	NM_002015	PD-1 signaling, Tumor marker
FOXP3	FOXP3_865975	forkhead_box_P3	NM_014009	T cell regulation
FUT4	FUT4_31443252	fucosyltransferase_4	NM_002033	Myeloid marker, stem cell
FYB	FYB_12891393	FYN_binding_protein	NM_001465	Lymphocyte infiltrate
G6PD	G6PD_10841194	glucose-6-phosphate_dehydrogenase	NM_000402	Housekeeping

GADD45GIP1	GADD45GIP1_3 29429	GADD45G_interacting_protein_1	NM_052850	Apoptosis
GAGE1,GAGE12I,GAGE12F	GAGE1_144260	G_antigen_1	NM_001468,NM_001477,NM	Tumor antigen
GAGE10	GAGE10_137250	G_antigen_10	NM_001098413	Tumor antigen
GAGE12J	GAGE12J_144260	G_antigen_12J	NM_001098406	Tumor antigen
GAGE13	GAGE13_116232	G_antigen_13	NM_001098412	Tumor antigen
GAGE2C,GAGE2A,GAGE2E	GAGE2C_104217	G_antigen_2C	NM_001472,NM_001127212	Tumor antigen
GATA3	GATA3_14061514	GATA_binding_protein_3	NM_001002295	Helper T cells
GBP1	GBP1_771872	guanylate_binding_protein_1	NM_002053	Type II interferon signaling
GNLY	GNLY_251357	granulysin	NM_006433	NK activation
GPR18	GPR18_238340	G_protein-coupled_receptor_18	NM_001098200	TCR coexpression
GRAP2	GRAP2_283387	GRB2-related_adaptor_protein_2	NM_004810	TCR coexpression
GUSB	GUSB_17671872	glucuronidase_beta	NM_000181	Housekeeping
GZMA	GZMA_165265	granzyme_A	NM_006144	Lymphocyte infiltrate
GZMB	GZMB_581688	granzyme_B	NM_004131	Lymphocyte infiltrate
GZMH	GZMH_233339	granzyme_H	NM_033423	Lymphocyte infiltrate
GZMK	GZMK_178286	granzyme_K	NM_002104	Lymphocyte infiltrate
HAVCR2	HAVCR2_594705	hepatitis_A_virus_cellular_receptor_2	NM_032782	Checkpoint pathway
HERC6	HERC6_17021806	HECT_and_RLD_domain_containing_E3_ubiquitin_protein_ligase_family_member_6	NM_017912	Dendritic cell
HGF	HGF_14151518	hepatocyte_growth_factor	NM_000601	Cytokine signaling

HIF1A	HIF1A_13371439	hypoxia_inducible_factor_1_alpha_subunit	NM_001530	PD-1 signaling, Tumor marker
HLA-A	HLA-A_345445	major_histocompatibility_complex_class_I_A	NM_002116	Antigen processing
HLA-B	HLA-B_639746	major_histocompatibility_complex_class_I_B	NM_005514	Antigen processing
HLA-C	HLA-C_9191023	major_histocompatibility_complex_class_I_C	NM_002117	Antigen processing
HLA-DMA	HLA-DMA_764869	major_histocompatibility_complex_class_II_DM_alpha	NM_006120	Antigen processing
HLA-DMB	HLA-DMB_854962	major_histocompatibility_complex_class_II_DM_beta	NM_002118	Antigen processing
HLA-DOA	HLA-DOA_55163	major_histocompatibility_complex_class_II_DO_alpha	NM_002119	Antigen processing
HLA-DOB	HLA-DOB_182290	major_histocompatibility_complex_class_II_DO_beta	NM_002120	Antigen processing
HLA-DPA1	HLA-DPA1_129237	major_histocompatibility_complex_class_II_DP_alpha_1	NM_033554	Antigen processing
HLA-DPB1	HLA-DPB1_175280	major_histocompatibility_complex_class_II_DP_beta_1	NM_002121	Antigen processing
HLA-DQA1	HLA-DQA1_587686	major_histocompatibility_complex_class_II_DQ_alpha_1	NM_002122	Antigen processing
HLA-DQA2	HLA-DQA2_840937	major_histocompatibility_complex_class_II_DQ_alpha_2	NM_020056	Antigen processing
HLA-DQB2	HLA-DQB2_142243	major_histocompatibility_complex_class_II_DQ_beta_2	NM_001198858	Antigen processing
HLA-DRA	HLA-DRA_186294	major_histocompatibility_complex_class_II_DR_alpha	NM_019111	Antigen processing
HLA-DRB1	HLA-DRB1_877982	major_histocompatibility_complex_class_II_DR_beta_1	NM_002124	Antigen processing
HLA-E	HLA-E_639747	major_histocompatibility_complex_class_I_E	NM_005516	Antigen processing
HLA-F	HLA-F_101204	major_histocompatibility_complex_class_I_F	NM_001098479	Antigen processing

HLA-F-AS1	HLA-F-AS1_726834	HLA-F_antisense_RNA_1	NR_026972	Antigen processing
HLA-G	HLA-G_483585	major_histocompatibility_complex_class_I_G	NM_002127	Antigen processing
HMBS	HMBS_796904	hydroxymethylbilane_synthase	NM_000190	Housekeeping
ICAM1	ICAM1_605711	intercellular_adhesion_molecule_1	NM_000201	Type II interferon signaling
ICOS	ICOS_382487	inducible_T-cell_costimulator	NM_012092	Checkpoint pathway
ICOSLG	ICOSLG_483588	inducible_T-cell_costimulator_ligand	NM_015259	Checkpoint pathway
ID2	ID2_579679	inhibitor_of_DNA_binding_2_HLH_protein	NM_002166	T cell regulation
ID3	ID3_572678	inhibitor_of_DNA_binding_3_HLH_protein	NM_002167	T cell regulation
IDO1	IDO1_268369	indoleamine_23-dioxygenase_1	NM_002164	Drug target
IDO2	IDO2_458562	indoleamine_23-dioxygenase_2	NM_194294	Checkpoint pathway
IFI27	IFI27_37143	interferon_alpha_inducible_protein_27	NM_005532	Type I interferon signaling
IFI35	IFI35_419526	interferon_induced_protein_35	NM_005533	Interferon signaling
IFI44L	IFI44L_12771376	interferon_induced_protein_44_like	NM_006820	Interferon signaling
IFI6	IFI6_47156	interferon_alpha_inducible_protein_6	NM_022873	Interferon signaling
IFIH1	IFIH1_20172123	interferon_induced_with_helicase_C_domain_1	NM_022168	Innate immune response
IFIT1	IFIT1_158259	interferon_induced_protein_with_tetratricopeptide_repeats_1	NM_001548	Type I interferon signaling
IFIT2	IFIT2_124224	interferon_induced_protein_with_tetratricopeptide_repeats_2	NM_001547	Cytokine signaling
IFIT3	IFIT3_72174	interferon_induced_protein_with_tetratricopeptide_repeats_3	NM_001031683	Type I interferon signaling
IFITM1	IFITM1_359459	interferon_induced_transmembrane_protein_1	NM_003641	Type I interferon signaling
IFITM2	IFITM2_316422	interferon_induced_transmembrane_protein_2	NM_006435	Type I interferon signaling

IFNA17	IFNA17_691788	interferon_alpha_17	NM_021268	T cell receptor signaling
IFNB1	IFNB1_579686	interferon_beta_1	NM_002176	Type II interferon signaling
IFNG	IFNG_400500	interferon_gamma	NM_000619	Type II interferon signaling
IGF1R	IGF1R_12291338	insulin_like_growth_factor_1_receptor	NM_000875	Adhesion, migration
IGSF6	IGSF6_411515	immunoglobulin_superfamily_member_6	NM_005849	Lymphocyte infiltrate
IKZF1	IKZF1_189301	IKAROS_family_zinc_finger_1	NM_006060	Lymphocyte development
IKZF2	IKZF2_537639	IKAROS_family_zinc_finger_2	NM_016260	Lymphocyte development
IKZF3	IKZF3_427534	IKAROS_family_zinc_finger_3	NM_012481	TCR coexpression
IKZF4	IKZF4_746852	IKAROS_family_zinc_finger_4	NM_022465	Lymphocyte development
IL10	IL10_491598	interleukin_10	NM_000572	Drug target
IL10RA	IL10RA_192296	interleukin_10_receptor_subunit_alpha	NM_001558	Lymphocyte infiltrate
IL12A	IL12A_739842	interleukin_12A	NM_000882	Drug target
IL12B	IL12B_314422	interleukin_12B	NM_002187	Drug target
IL13	IL13_268378	interleukin_13	NM_002188	Cytokine signaling
IL15	IL15_49155	interleukin_15	NM_000585	T cell regulation
IL17A	IL17A_233320	interleukin_17A	NM_002190	Helper T cells
IL17F	IL17F_35139	interleukin_17F	NM_052872	Dendritic cell, macrophage
IL18	IL18_140246	interleukin_18	NM_001562	T cell regulation
IL1A	IL1A_14431546	interleukin_1_alpha	NM_000575	Cytokine signaling
IL1B	IL1B_659766	interleukin_1_beta	NM_000576	Type II interferon signaling
IL2	IL2_366451	interleukin_2	NM_000586	Drug target

IL21	IL21_368450	interleukin_21	NM_021803	Cytokine signaling
IL22	IL22_263349	interleukin_22	NM_020525	T cell regulation
IL23A	IL23A_386491	interleukin_23_subunit_alpha	NM_016584	Dendritic cell, macrophage
IL2RA	IL2RA_240338	interleukin_2_receptor_subunit_alpha	NM_000417	Cytokine signaling
IL2RB	IL2RB_9991107	interleukin_2_receptor_subunit_beta	NM_000878	TCR coexpression
IL2RG	IL2RG_884988	interleukin_2_receptor_subunit_gamma	NM_000206	Lymphocyte infiltrate
IL3RA	IL3RA_465565	interleukin_3_receptor_subunit_alpha	NM_002183	Dendritic cell
IL4	IL4_380477	interleukin_4	NM_000589	Cytokine signaling
IL6	IL6_521626	interleukin_6	NM_000600	Cytokine signaling
IL7	IL7_545652	interleukin_7	NM_000880	Cytokine signaling
IL7R	IL7R_551658	interleukin_7_receptor	NM_002185	TCR coexpression
IRF1	IRF1_752861	interferon_regulatory_factor_1	NM_002198	Type II interferon signaling
IRF4	IRF4_786895	interferon_regulatory_factor_4	NM_002460	Interferon signaling
IRF9	IRF9_12191322	interferon_regulatory_factor_9	NM_006084	Type II interferon signaling
IRS1	IRS1_37283828	insulin_receptor_substrate_1	NM_005544	Tumor marker
ISG15	ISG15_66173	ISG15_ubiquitin-like_modifier	NM_005101	Type I interferon signaling
ISG20	ISG20_642750	interferon_stimulated_exonuclease_gene_20	NM_002201	Type I interferon signaling
ITGA1	ITGA1_814914	integrin_subunit_alpha_1	NM_181501	Adhesion, migration
ITGAE	ITGAE_3375348 1	integrin_subunit_alpha_E 1	NM_002208	Adhesion, migration
ITGAL	ITGAL_535638	integrin_subunit_alpha_L	NM_002209	Leukocyte migration
ITGAM	ITGAM_310332 09	integrin_subunit_alpha_M 09	NM_001145808	Leukocyte migration
ITGAX	ITGAX_204821 51	integrin_subunit_alpha_X 51	NM_000887	Dendritic cell

ITGB1	ITGB1_679777	integrin_subunit_beta_1	NM_002211	Adhesion, migration
ITGB2	ITGB2_1542164 8	integrin_subunit_beta_2	NM_000211	Lymphocyte infiltrate
ITGB7	ITGB7_2434254 4	integrin_subunit_beta_7	NM_000889	Leukocyte migration
ITK	ITK_563669	IL2_inducible_T-cell_kinase	NM_005546	TCR coexpression
JAML	JAML_78188	junction_adhesion_molecule_like	NM_001098526	Lymphocyte infiltrate
JCHAIN	JCHAIN_134238	joining_chain_of_multimeric_IgA_and_IgM	NM_144646	B cell marker
KIAA0101	KIAA0101_3194 26	KIAA0101	NM_014736	Proliferation
KIR2DL1	KIR2DL1_9142	killer_cell_immunoglobulin_like_receptor_two_ig_domains_and_l ong_cytoplasmic_tail_1	NM_014218	Drug target
KIR2DL2	KIR2DL2_27126	killer_cell_immunoglobulin_like_receptor_two_ig_domains_and_l ong_cytoplasmic_tail_2	NM_014218	NK cell marker
KIR2DL3	KIR2DL3_65475 7	killer_cell_immunoglobulin_like_receptor_two_ig_domains_and_l ong_cytoplasmic_tail_3	NM_015868	NK cell marker
KLF2	KLF2_9111017	Kruppel_like_factor_2	NM_016270	T cell regulation, trafficking
KLRB1	KLRB1_177284	killer_cell_lectin_like_receptor_B1	NM_002258	NK activation
KLRD1	KLRD1_515619	killer_cell_lectin_like_receptor_D1	NM_002262	Drug target
KLRF1	KLRF1_188285	killer_cell_lectin_like_receptor_F1	NM_016523	NK activation
KLRG1	KLRG1_410518	killer_cell_lectin_like_receptor_G1	NM_005810	NK activation
KLRK1	KLRK1_698804	killer_cell_lectin_like_receptor_K1	NM_007360	NK activation
KREMEN1	KREMEN1_128 61389	kringle_containing_transmembrane_protein_1	NM_032045	Neutrophil
KRT5	KRT5_1063116 5	keratin_5	NM_000424	Tumor marker
KRT7	KRT7_440543	keratin_7	NM_005556	Tumor marker
LAG3	LAG3_1311141 9	lymphocyte_activating_3	NM_002286	Drug target

LAMP1	LAMP1_374485	lysosomal_associated_membrane_protein_1	NM_005561	Lymphocyte infiltrate
LAMP3	LAMP3_12361344	lysosomal_associated_membrane_protein_3	NM_014398	TCR coexpression
LAPTM5	LAPTM5_555664	lysosomal_protein_transmembrane_5	NM_006762	Lymphocyte infiltrate
LCK	LCK_89192	LCK_proto-oncogene_Src_family_tyrosine_kinase	NM_001042771	TCR coexpression
LCN2	LCN2_153259	lipocalin_2	NM_005564	Innate immune response
LEXM	LEXM_10551156	lymphocyte_expansion_molecule	NM_001110533	T cell differentiation
LILRB1	LILRB1_15681666	leukocyte_immunoglobulin_like_receptor_B1	NM_001081637	Leukocyte inhibition
LILRB2	LILRB2_891994	leukocyte_immunoglobulin_like_receptor_B2	NM_001080978	Lymphocyte infiltrate
LMNA	LMNA_588696	lamin_A_C	NM_170707	Housekeeping
LRG1	LRG1_24131	leucine_rich_alpha-2-glycoprotein_1	NM_052972	Neutrophil
LRP1	LRP1_25642670	LDL_receptor_related_protein_1	NM_002332	Housekeeping
LST1	LST1_22120	leukocyte_specific_transcript_1	NM_007161	Leukocyte inhibition
LY9	LY9_13751476	lymphocyte_antigen_9	NM_002348	Lymphocyte infiltrate
LYZ	LYZ_120222	lysozyme	NM_000239	Innate immune response
M6PR	M6PR_229336	mannose-6-phosphate_receptor_cation_dependent	NM_002355	T cell regulation
MAD2L1	MAD2L1_115221	MAD2_mitotic_arrest_deficient-like_1_yeast	NM_002358	Proliferation
MADCAM1	MADCAM1_9291024	mucosal_vascular_addressin_cell_adhesion_molecule_1	NM_130760	Adhesion, migration
MAGEA1	MAGEA1_22129	MAGE_family_member_A1	NM_004988	Tumor antigen
MAGEA10	MAGEA10_241320	MAGE_family_member_A10	NM_021048	Tumor antigen

MAGEA12	MAGEA12_30130	MAGE_family_member_A12	NM_005367	Tumor antigen
MAGEA3	MAGEA3_20121	MAGE_family_member_A3	NM_005362,NM_005363	Tumor antigen
MAGEA4	MAGEA4_28131	MAGE_family_member_A4	NM_001011548	Tumor antigen
MAGEC2	MAGEC2_249358	MAGE_family_member_C2	NM_016249	Tumor antigen
MAPK1	MAPK1_13241425	mitogen-activated_protein_kinase_1	NM_002745	Tumor marker
MAPK14	MAPK14_14031511	mitogen-activated_protein_kinase_14	NM_139012	Innate immune response
MELK	MELK_300401	maternal_embryonic_leucine_zipper_kinase	NM_014791	Proliferation
MIF	MIF_157270	macrophage_migration_inhibitory_factor_glycosylation-inhibiting_factor	NM_002415	Innate immune response
MKI67	MKI67_581686	marker_of_proliferation_Ki-67	NM_002417	Proliferation
MLANA	MLANA_159265	melan-A	NM_005511	Tumor antigen
MMP2	MMP2_11051213	matrix_metallopeptidase_2	NM_004530	Tumor marker
MMP9	MMP9_11741283	matrix_metallopeptidase_9	NM_004994	Tumor marker
MPO	MPO_15121620	myeloperoxidase	NM_000250	Myeloid marker
MRC1	MRC1_529634	mannose_receptor_C_type_1	NM_002438	Dendritic cell, macrophage
MS4A1	MS4A1_127232	membrane_spanning_4-domains_A1	NM_021950	Drug target
MTOR	MTOR_62366338	mechanistic_target_of_rapamycin	NM_004958	PD-1 signaling, Tumor marker
MX1	MX1_232336	MX_dynamin_like_GTPase_1	NM_001178046	Interferon signaling
MYC	MYC_510619	v-myc_avian_myelocytomatosis_viral_oncogene_homolog	NM_002467	Tumor marker

NCAM1	NCAM1_26012709	neural_cell_adhesion_molecule_1	NM_181351	Adhesion, migration
NCF1	NCF1_509617	neutrophil_cytosolic_factor_1	NM_000265	Chemokine signaling
NCR1	NCR1_754861	natural_cytotoxicity_triggering_receptor_1	NM_004829	NK cell marker
NCR3	NCR3_234342	natural_cytotoxicity_triggering_receptor_3	NM_147130	NK cell marker
NECTIN2	NECTIN2_13881496	nectin_cell_adhesion_molecule_2	NM_001042724	Adhesion, migration
NFATC1	NFATC1_27682875	nuclear_factor_of_activated_T-cells_1	NM_172387	PD-1 signaling
NFKBIA	NFKBIA_734840	NFKB_inhibitor_alpha	NM_020529	T cell receptor signaling
NKG7	NKG7_557664	natural_killer_cell_granule_protein_7	NM_005601	Lymphocyte infiltrate
NOS2	NOS2_91195	nitric_oxide_synthase_2	NM_000625	Innate immune response
NOTCH3	NOTCH3_738847	notch_3	NM_000435	Tumor marker
NRP1	NRP1_14831588	neuropilin_1	NM_003873	Dendritic cell
NT5E	NT5E_12531355	5-nucleotidase_ecto	NM_002526	Checkpoint pathway
NTN3	NTN3_12821377	netrin_3	NM_006181	B cell marker
OAS1	OAS1_757865	2-5-oligoadenylate_synthetase_1	NM_016816	Type II interferon signaling
OAS2	OAS2_15981707	2-5-oligoadenylate_synthetase_2	NM_016817	Interferon signaling
OAS3	OAS3_667776	2-5-oligoadenylate_synthetase_3	NM_006187	Interferon signaling
PDCD1	PDCD1_143244	programmed_cell_death_1	NM_005018	Drug target
PDCD1LG2	PDCD1LG2_315423	programmed_cell_death_1_ligand_2	NM_025239	Checkpoint pathway

PECAM1	PECAM1_22132	platelet_and_endothelial_cell_adhesion_molecule_1	NM_000442	Adhesion, migration
PGF	PGF_742842	placental_growth_factor	NM_002632	Tumor marker
PIK3CA	PIK3CA_12781384	phosphatidylinositol-45-bisphosphate_3-kinase_catalytic_subunit_alpha	NM_006218	PD-1 signaling, Tumor marker
PIK3CD	PIK3CD_19842095	phosphatidylinositol-45-bisphosphate_3-kinase_catalytic_subunit_delta	NM_005026	PD-1 signaling, Tumor marker
PMEL	PMEL_233339	premelanosome_protein	NM_006928	Drug target
POLR2A	POLR2A_42334334	polymerase_RNA_II_subunit_A	NM_000937	Housekeeping
POU2AF1	POU2AF1_230337	POU_class_2_associating_factor_1	NM_006235	B cell marker
PRDM1	PRDM1_484588	PR_domain_1	NM_001198	PD-1 signaling
PRF1	PRF1_672778	perforin_1	NM_005041	NK activation
PSMB9	PSMB9_384491	proteasome_subunit_beta_9	NM_002800	Type II interferon signaling
PTEN	PTEN_19732078	phosphatase_and_tensin_homolog	NM_000314	PD-1 signaling, Tumor marker
PTGS2	PTGS2_14761583	prostaglandin-endoperoxide_synthase_2	NM_000963	Tumor marker
PTK7	PTK7_15161625	protein_tyrosine_kinase_7_inactive	NM_002821	Tumor marker
PTPN11	PTPN11_14261533	protein_tyrosine_phosphatase_non-receptor_type_11	NM_002834	PD-1 signaling, Tumor marker
PTPN6	PTPN6_17741884	protein_tyrosine_phosphatase_non-receptor_type_6	NM_080548	T cell receptor signaling
PTPN7	PTPN7_471581	protein_tyrosine_phosphatase_non-receptor_type_7	NM_001199797	Lymphocyte infiltrate
PTPRC	PTPRC_710817	protein_tyrosine_phosphatase_receptor_type_C	NM_002838	Lymphocyte infiltrate
PTPRCAP	PTPRCAP_383516	protein_tyrosine_phosphatase_receptor_type_C_associated_prot ein	NM_005608	TCR coexpression

PVR	PVR_9571064	poliovirus_receptor	NM_006505	Checkpoint pathway
PYGL	PYGL_586697	phosphorylase_glycogen_liver	NM_002863	Neutrophil
RB1	RB1_24592560	RB_transcriptional_corepressor_1	NM_000321	Tumor marker
RORC	RORC_12011307	RAR_related_orphan_receptor_C	NM_005060	Helper T cells
RPS6	RPS6_124229	ribosomal_protein_S6	NM_001010	Tumor marker
S100A8	S100A8_239334	S100_calcium_binding_protein_A8	NM_002964	Myeloid marker, MDSC
S100A9	S100A9_174280	S100_calcium_binding_protein_A9	NM_002965	Myeloid marker, MDSC
SAMHD1	SAMHD1_19002006	SAM_and_HD_domain_containing_deoxynucleoside_triphosphate_triphosphohydrolase_1	NM_015474	Lymphocyte infiltrate
SDHA	SDHA_16361735	succinate_dehydrogenase_complex_flavoprotein_subunit_A	NM_004168	Housekeeping
SELL	SELL_139245	selectin_L	NM_000655	Leukocyte migration
SH2D1A	SH2D1A_540642	SH2_domain_containing_1A	NM_002351	Lymphocyte activation
SH2D1B	SH2D1B_173275	SH2_domain_containing_1B	NM_053282	Lymphocyte activation
SIT1	SIT1_148254	signaling_threshold_regulating_transmembrane_adaptor_1	NM_014450	Lymphocyte infiltrate
SKAP2	SKAP2_809912	src_kinase_associated_phosphoprotein_2	NM_003930	B cell marker
SLAMF7	SLAMF7_9161020	SLAM_family_member_7	NM_021181	Drug target
SLAMF8	SLAMF8_9071016	SLAM_family_member_8	NM_020125	Lymphocyte infiltrate
SNAI1	SNAI1_138246	snail_family_transcriptional_repressor_1	NM_005985	Tumor marker, stemness
SNAI2	SNAI2_722828	snail_family_transcriptional_repressor_2	NM_003068	Tumor marker, stemness
SRGN	SRGN_230328	serglycin	NM_002727	Lymphocyte infiltrate

SSX2	SSX2_233349	SSX_family_member_2	NM_003147	Tumor antigen
STAT1	STAT1_18871996	signal_transducer_and_activator_of_transcription_1	NM_007315	Type II interferon signaling
STAT3	STAT3_17511856	signal_transducer_and_activator_of_transcription_3	NM_139276	Drug target
STAT4	STAT4_245352	signal_transducer_and_activator_of_transcription_4	NM_003151	Helper T cells
STAT5A	STAT5A_18501954	signal_transducer_and_activator_of_transcription_5A	NM_003152	Cytokine signaling
STAT6	STAT6_231339	signal_transducer_and_activator_of_transcription_6	NM_003153	Helper T cells
TAGAP	TAGAP_10531160	T-cell_activation_RhoGTPase_activating_protein	NM_054114	Lymphocyte infiltrate
TAP1	TAP1_15701675	transporter_1_ATP-binding_cassette_sub-family_B_MDR_TAP	NM_000593	Type II interferon signaling
TARP	TARP_416517	TCR_gamma_alternate_reading_frame_protein	NM_001003806	Lymphocyte infiltrate
TBP	TBP_259367	TATA-box_binding_protein	NM_003194	Housekeeping
TBX21	TBX21_9251036	T-box_21	NM_013351	Type II interferon signaling
TCF7	TCF7_677799	transcription_factor_7_T-cell_specific_HMG-box	NM_003202	Tumor marker
TDO2	TDO2_55162	tryptophan_23-dioxygenase	NM_005651	Checkpoint pathway
TFRC	TFRC_10891196	transferrin_receptor	NM_001128148	Housekeeping
TGFB1	TGFB1_13681474	transforming_growth_factor_beta_1	NM_000660	Checkpoint pathway
TIGIT	TIGIT_383491	T-cell_immunoreceptor_with_Ig_and_ITIM_domains	NM_173799	TCR coexpression
TLR3	TLR3_24932595	toll_like_receptor_3	NM_003265	Dendritic cell
TLR7	TLR7_99206	toll_like_receptor_7	NM_016562	Innate immune response
TLR8	TLR8_36137	toll_like_receptor_8	NM_138636	Lymphocyte infiltrate
TLR9	TLR9_619727	toll_like_receptor_9	NM_017442	Drug target

TNF	TNF_450555	tumor_necrosis_factor	NM_000594	Checkpoint pathway
TNFAIP8	TNFAIP8_188295	TNF_alpha_induced_protein_8	NM_014350	Lymphocyte infiltrate
TNFRSF14	TNFRSF14_846950	tumor_necrosis_factor_receptor_superfamily_member_14	NM_003820	Checkpoint pathway
TNFRSF17	TNFRSF17_254359	tumor_necrosis_factor_receptor_superfamily_member_17	NM_001192	B cell marker
TNFRSF18	TNFRSF18_348456	tumor_necrosis_factor_receptor_superfamily_member_18	NM_004195	Drug target
TNFRSF4	TNFRSF4_304389	tumor_necrosis_factor_receptor_superfamily_member_4	NM_003327	Drug target
TNFRSF9	TNFRSF9_894998	tumor_necrosis_factor_receptor_superfamily_member_9	NM_001561	Drug target
TNFSF10	TNFSF10_251357	tumor_necrosis_factor_superfamily_member_10	NM_003810	Apoptosis
TNFSF13B	TNFSF13B_774879	tumor_necrosis_factor_superfamily_member_13b	NM_006573	B cell marker
TNFSF14	TNFSF14_224334	tumor_necrosis_factor_superfamily_member_14	NM_003807	Checkpoint pathway
TNFSF18	TNFSF18_128228	tumor_necrosis_factor_superfamily_member_18	NM_005092	Checkpoint pathway
TNFSF4	TNFSF4_347439	tumor_necrosis_factor_superfamily_member_4	NM_003326	Checkpoint pathway
TNFSF9	TNFSF9_325412	tumor_necrosis_factor_superfamily_member_9	NM_003811	Cytokine signaling
TOP2A	TOP2A_27522855	topoisomerase_DNA_II_alpha	NM_001067	Proliferation
TP63	TP63_143246	tumor_protein_p63	NM_003722	Tumor marker
TRIM29	TRIM29_882990	tripartite_motif_containing_29	NM_012101	Tumor marker
TUBB	TUBB_369479	tubulin_beta_class_I	NM_178014	Housekeeping

TWIST1	TWIST1_9291033	twist_family_bHLH_transcription_factor_1	NM_000474	Tumor marker, stemness
TYROBP	TYROBP_350455	TYRO_protein_tyrosine_kinase_binding_protein	NM_198125	Lymphocyte infiltrate
VCAM1	VCAM1_829933	vascular_cell_adhesion_molecule_1	NM_001078	Leukocyte migration
VEGFA	VEGFA_17121817	vascular_endothelial_growth_factor_A	NM_001171623	Chemokine signaling
VTCN1	VTCN1_49157	V-set_domain_containing_T_cell_activation_inhibitor_1	NM_024626	Checkpoint pathway
XAGE1B	XAGE1B_469547	X_antigen_family_member_1B	NM_001097594	Tumor antigen
ZAP70	ZAP70_673781	zeta_chain_of_T_cell_receptor_associated_protein_kinase_70kDa	NM_001079	T cell receptor signaling
ZBTB46	ZBTB46_13361440	zinc_finger_and_BTBD_domain_containing_46	NM_025224	Dendritic cell
ZEB1	ZEB1_74175	zinc_finger_E-box_binding_homeobox_1	NM_001174093	Tumor marker, stemness

