

IMMUNE GENE EXPRESSION PROFILING

OmniSeq INSIGHT®'s immune response assay is a targeted, next-generation sequencing (NGS) gene expression assay that enables immuno-oncology assessment of the tumor microenvironment. It does this by measuring gene expression activity of markers associated with different leukocyte subsets, antigen presentation, checkpoint pathways, and tumor progression. The assay measures the expression of genes involved in tumor-immune interactions, including the low-expressing genes involved in inflammatory signaling and 64 genes validated with NYS CLEP and clinically reported. The 395 gene expression panel is also separately available for research use.

395 genes interrogated for expression of markers associated with the cancer-immunity cycle and tumor microenvironment:

Checkpoint Pathway Genes											
ADORA2A	BTLA	C10orf54	CD160	CD244	CD27	CD274	CD276	CD28	CD40	CD48	CD69
CD70	CD80	CD86	CEACAM1	CTLA4	ENTPD1	EOMES	FOXO1	HAVCR2	HIF1A	ICOS	ICOSLG
IDO1	IDO2	IL10	IL12A	IL12B	IL2	KIR2DL1	KLRD1	LAG3	MS4A1	MTOR	NFATC1
NT5E	PDCD1	PDCD1LG2	PIK3CA	PIK3CD	PMEL	PRDM1	PTEN	PTPN11	PVR	SLAMF7	STAT3
TDO2	TGFB1	TLR9	TNF	TNFRSF14	TNFRSF18	TNFRSF4	TNFRSF9	TNFSF14	TNFSF18	TNFSF4	VTCN1
Cytokine Signaling Genes											
BCL6	BST2	CCL17	CCL20	CCL22	CCR1	CCR4	CCR6	CIITA	CSF1R	CSF2RB	CX3CL1
CXCL1	CXCL10	CXCL11	CXCL13	CXCL8	CXCL9	CXCR2	CXCR3	CXCR5	CYBB	DDX58	EIF2AK2
FASLG	GBP1	HGF	ICAM1	IFI27	IFI35	IFI44L	IFI6	IFIT1	IFIT2	IFIT3	IFITM1
IFITM2	IFNB1	IFNG	IL13	IL1A	IL1B	IL21	IL2RA	IL4	IL6	IL7	IRF1
IRF4	IRF9	ISG15	ISG20	MX1	NCF1	OAS1	OAS2	OAS3	PSMB9	STAT1	STAT5A
Lymphocyte Genes											
AIF1	ALOX15B	ARG1	B3GAT1	BATF	CA4	CCR2	CD14	CD163	CD19	CD209	CD22
CD33	CD4	CD68	CD79A	CD79B	CEACAM8	CLEC4C	CMKLR1	DGAT2	EGR2	FAS	FCGR1A
FCGR2B	FCGR3A	FCGR3B	FCRLA	FUT4	GATA3	GPLY	HERC6	IL17A	IL17F	IL23A	IL3RA
ITGAX	JCHAIN	KIR2DL2	KIR2DL3	KLRB1	KLRF1	KLRG1	KLRK1	KREMEN1	LEXM	LRG1	MPO
MRC1	NCR1	NCR3	NRP1	NTN3	POU2AF1	PRF1	PYGL	RORC	S100A8	S100A9	SKAP2
STAT4	STAT6	TLR3	TNFRSF17	TNFSF13B	ZBTB46						
Lymphocyte Presentation Genes											
AXL	C1QA	C1QB	CBLB	CCL18	CCL2	CCL21	CCL3	CCL4	CCL5	CCR5	CCR7
CD1C	CD1D	CD2	CD247	CD37	CD3D	CD3E	CD3G	CD40LG	CD52	CD6	CD63
CD74	CD83	CD8A	CD8B	CORO1A	CRTAM	CTSS	CX3CR1	CXCR4	CXCR6	DMBT1	EBI3
FCER1G	FOXP3	FYB	GPR18	GRAP2	GZMA	GZMB	GZMH	GZMK	HLA-A	HLA-B	HLA-C
HLA-DMA	HLA-DMB	HLA-DOA	HLA-DOB	HLA-DPA1	HLA-DPB1	HLA-DQA1	HLA-DQA2	HLA-DQB2	HLA-DRA	HLA-DRB1	HLA-E
HLA-F	HLA-F-AS1	HLA-G	ID2	ID3	IFIH1	IFNA17	IGSF6	IKZF1	IKZF2	IKZF3	IKZF4
IL10RA	IL15	IL18	IL22	IL2RB	IL2RG	IL7R	ITGAL	ITGAM	ITGB2	ITGB7	ITK
JAML	KLF2	LAMP1	LAMP3	LAPTM5	LCK	LCN2	LILRB1	LILRB2	LST1	LY9	LYZ
M6PR	MAPK14	MIF	NFKBIA	NKG7	NOS2	PTPN6	PTPN7	PTPRC	PTPRCAP	SAMHD1	SELL
SH2D1A	SH2D1B	SIT1	SLAMF8	SRGN	TAGAP	TARP	TIGIT	TLR7	TLR8	TNFAIP8	TYROBP
VCAM1	ZAP70										
Tumor Characterization Genes											
ADGRE5	AKT1	BAGE	BCL2	BCL2L11	BRCA1	BRCA2	BUB1	CCNB2	CD226	CD38	CD44
CD47	CD53	CDK1	CDKN2A	CDKN3	CTAG1B	CTAG2	EFNA4	EGFR	EGR3	FOXM1	GADD45GIP1
GAGE1	GAGE10	GAGE12J	GAGE13	GAGE2	IGF1R	IRS1	ITGA1	ITGAE	ITGB1	KIAA0101	KRT5
KRT7	MAD2L1	MADCAM1	MAGEA1	MAGEA10	MAGEA12	MAGEA3	MAGEA4	MAGEC2	MAPK1	MELK	MKI67
MLANA	MMP2	MMP9	MYC	NCAM1	NECTIN2	NOTCH3	PECAM1	PGF	PTGS2	PTK7	RB1
RPS6	SNAI1	SNAI2	SSX2	TCF7	TNFSF10	TOP2A	TP63	TRIM29	TWIST1	XAGE1B	ZEB1
Housekeeping Genes											
ABCF1	G6PD	GUSB	HMBS	LMNA	LRP1	POLR2A	SDHA	TBP	TFRC	TUBB	

OmniSeq INSIGHT was developed, and its performance characteristics determined by, OmniSeq, Inc., a CAP-accredited and ISO: 13485:2016-certified CLIA laboratory in Buffalo, NY. OmniSeq® is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) and by the New York State Clinical Laboratory Evaluation Program as qualified to perform high-complexity clinical laboratory testing, including all components of OmniSeq INSIGHT. OmniSeq INSIGHT is CE certified and a registered trademark of OmniSeq, Inc., a subsidiary of Labcorp.