

Oligo GEMArray[®] DNA Microarray:

Human Asthma

Catalog Number

OHS-067
EHS-067

Format:

HybTube (Standard protocol)
HybPlate (Higher throughput protocol)

Description

The Oligo GEMArray[®] Human Asthma Microarray profiles the expression of 113 genes involved in asthma. Genes involved in the abnormally robust immune response that is characteristic of the disease are represented on this array. These genes include cytokines and their receptors and other immune response genes. Genes involved in the allergic response to biotic, chemical, and viral stimuli are included as well. Through a simple side-by-side hybridization experiment you can determine differential gene expression between your samples.

Functional Gene Groupings

Cytokines:

Chemokines: CCL1, CCL11, CCL13, CCL17, CCL18, CCL19, CCL2, CCL20, CCL22, CCL24, CCL3, CCL4, CCL5, CCL7, CCL8, CX3CL1, CXCL1, CXCL2, CXCL3, IL13, IL18, IL8, XCL1.

Interferons: CSF3, IFNA1, IFNB1, IFNG, IL15.

Interleukins: CSF3, IL10, IL11, IL12A, IL12B, IL13, IL13RA1, IL18, IL1A, IL1B, IL2, IL21, IL3, IL4, IL5, IL5RA, IL6, IL7, IL8, IL9.

Tumor Necrosis Factor Family: CD40LG, FASLG, LTA, TNF, TNFSF13, TNFSF7, TNFSF8.

Other Cytokines: CSF1, CSF2, IFNGR1, IL16, IL17, IL19, KITLG, PTPRC, TGFB1, TXLNA.

Cytokine Receptors:

Chemokine Receptors: CCL13, CCR10, CCR2, CCR3, CCR4, CCR5, CCR6, CCR7, CCR8, CX3CR1, XCR1.

Interferon Receptors: IFNAR2, IFNGR1, IFNGR2, IL12B, IL13RA1, IL2RG, IL4R, IL5RA, IL6R, IL9R.

Interleukin Receptors: IL12RB1, IL12RB2, IL13RA2, IL18R1, IL2RA, IL2RG, IL4R, IL5RA, IL6R, IL6ST, IL8RA, IL8RB, IL9R.

Immune Response:

IgE Binding: FCER1A, FCER2, LGALS3, MS4A2.

Isotype Switching: CD40LG, IL10, IL4, TGFB1, TNFSF13.

B cell Activation: CD40, CD40LG, IFNB1, IL10, IL11, IL4, IL7, PTPRC, TNFRSF7.

T cell Activation: CD28, CD86, IL10, IL12B, IL18, IL2, IL21, IL4, IL7, ICOSLG, IRF4, LCK, PTPRC, SFTPD, SYK, TNFRSF7, TRAT1.

T-helper 1 Type Immune Response: IL12B, IL18.

T-helper 2 Type Immune Response: IL10, IL18, IL4.

Cytokine Biosynthesis: CD28, CD86, IL10, IL12B, IL18, IL21, IL4, IL6, IL9, IRF4, SFTPD, TNFRSF7.

Humoral Immune Response: CCL18, CCL2, CCL20, CCL22, CCL3, CCL7, CCR2, CCR6, CCR7, CD28, CD40, IL12A, IL12B, IL12RB1, IL13, IL1B, IL2, IL6, IL7, LTB4R2, MS4A2, SFTPD, XCL1, XCR1, YY1.

Cellular Defense Response: CCL11, CCL5, CCR2, CCR3, CCR5, CCR6, CSF2, CSF3, CX3CR1, IL4, IL8RB.

Other Immune Response Genes: CCL1, CCL13, CCL17, CCL19, CCL24, CCL4, CCL8, CCR4, CSF1, CX3CL1, CXCL1, CXCL2, CXCL3, FASLG, FOS, IFNG, IL15, IL16, IL17, IL18R1, IL19, IL1A, IL2RA, IL2RG, IL3, IL4R, IL5, IL6R, IL6ST, IL8, IL8RA, LTA, LTB4R, LTBR, TNF, TNFSF7, TNFSF8.

Response to Stimulus:

Response to Biotic Stimuli: CCL18, CCL20, CYSLTR1, GATA3, IFNA1, IFNB1.

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Response to Chemical Stimuli: CCL1, CCL11, CCL13, CCL17, CCL18, CCL19, CCL2, CCL20, CCL22, CCL24, CCL3, CCL4, CCL5, CCL7, CCL8, CCR2, CCR3, CCR4, CCR5, CCR6, CCR7, CCR8, CX3CR1, CXCL1, CXCL2, CXCL3, FGF2, IL16, IL1A, IL4, IL8, IL8RA, IL8RB, LTB4R2, SFTPD, XCL1, XCR1.

Response to Virus: CCL11, CCL19, CCL22, CCL4, CCL5, CCL8, IFNA1, IFNAR2, IFNB1, IFNG, IFNGR1, IFNGR2, TNF.

Sensory Perception: CCL1, CCL11, CCL13, CCL17, CCL18, CCL19, CCL2, CCL20, CCL22, CCL24, CCL3, CCL4, CCL5, CCL7, CCL8, CXCL2, CXCL3, GATA3, IL16, IL8, IL8RA, IL8RB, XCL1.

Other Genes Involved in the Response to Stimuli: LCK, PDGFB, TXLNA.

Th2 Cytokine Signaling Pathway:

FOS, GATA3, JAK1, JAK3, STAT6, TBX21, TGFB1, YY1.

Apoptosis:

Anti-apoptosis: CCL2, CD40LG, IL10, IL1A, IL2, IL3, TGFB1, TNF, TNFRSF7.

Induction of Apoptosis: FASLG, IFNB1, IL18, LCK, LTA, TNFRSF7, TNFSF8.

Other Apoptosis: CD28, CD40, IL17, IL19, IL1B, IL2RA, IL4, IL6, IL7, LTBR.

Transcription Factors and Their Regulators:

CD86, FOS, GATA3, IL4, IRF4, STAT6, TBX21, TGFB1, TNF, YY1.

Storage Conditions

Please check the kit components immediately after you receive this package. SuperArray is only responsible for missing items reported within two (2) business days of receipt.

GEArray microarrays are shipped at ambient temperature enclosed in either a HybTube or ExpressPak Storage Box. They should be stored at -20°C upon receipt.

References

1. Olivenstein, R., *et al.* (1999) IL-4 and IL-5 mRNA expression in induced sputum of asthmatic subjects: comparison with bronchial wash. *J. Allergy Clin. Immunol.* **103**(2 Pt 1), 238-45.
2. Rosenwasser, L.J. and L. Borish. (1997) Genetics of atopy and asthma: the rationale behind promoter-based candidate gene studies (IL-4 and IL-10). *Am. J. Respir. Crit. Care Med.* **156**(4 Pt 2), S152-5.
3. Wong, C.K., *et al.* (2001) Proinflammatory cytokines (IL-17, IL-6, IL-18 and IL-12) and Th cytokines (IFN-gamma, IL-4, IL-10 and IL-13) in patients with allergic asthma. *Clin Exp Immunol.* **125**(2), 177-83.
4. Hellman, C., *et al.* (2002) Down-regulated IL-5 receptor expression on peripheral blood eosinophils from budesonide-treated children with asthma. *Allergy* **57**(4), 323-8.
5. Medoff, B.D., *et al.* (2002) IFN-gamma-inducible protein 10 (CXCL10) contributes to airway hyperreactivity and airway inflammation in a mouse model of asthma. *J Immunol.* **168**(10), 5278-86.
6. Romagnani, S. (2002) Cytokines and chemoattractants in allergic inflammation. *Mol Immunol.* **38**(12-13), 881-5.
7. Teran, L.M., *et al.* (1999) Th1- and Th2-type cytokines regulate the expression and production of eotaxin and RANTES by human lung fibroblasts. *Am. J. Respir. Cell. Mol. Biol.* **20**(4), 777-86.
8. Zou, J., *et al.* (2002) Microarray profile of differentially expressed genes in a monkey model of allergic asthma. *Genome Biol.* **3**(5), 20.
9. Owen, C. (2001) Chemokine receptors in airway disease: which receptors to target? *Pulm. Pharmacol. Ther.* **14**(3), 193-202.
10. Ochi, H., *et al.* (1999) T helper cell type 2 cytokine-mediated comitogenic responses and CCR3 expression during differentiation of human mast cells in vitro. *J Exp Med.* **190**(2), 267-80.
11. Panina-Bordignon, P., *et al.* (2001) The C-C chemokine receptors CCR4 and CCR8 identify airway T cells of allergen-challenged atopic asthmatics. *J Clin Invest* **107**(11), 1357-64.
12. Ray, A. and L. Cohn. (1999) Th2 cells and GATA-3 in asthma: new insights into the regulation of airway inflammation. *J Clin Invest.* **104**(8), 985-93.
13. Spinozzi, F., *et al.* (1998) Defective expression of Fas messenger RNA and Fas receptor on pulmonary T cells from patients with asthma. *Ann Intern Med.* **128**(5), 363-9.

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Oligo GEArray® Human Asthma Microarray

Array Layout:

RPS27A 1	CCL1 2	CCL11 3	CCL13 4	CCL17 5	CCL18 6	CCL19 7	CCL2 8
CCL20 9	CCL22 10	CCL24 11	CCL3 12	CCL4 13	CCL5 14	CCL7 15	CCL8 16
CCR10 17	CCR2 18	CCR3 19	CCR4 20	CCR5 21	CCR6 22	CCR7 23	CCR8 24
CD28 25	CD40 26	CD40LG 27	CD86 28	CSF1 29	CSF2 30	CSF3 31	CX3CL1 32
CX3CR1 33	CXCL1 34	CXCL2 35	CXCL3 36	CYSLTR1 37	FASLG 38	FCER1A 39	FCER1G 40
FCER2 41	FGF2 42	FOS 43	GATA3 44	ICOSLG 45	IFNA1 46	IFNAR2 47	IFNB1 48
IFNG 49	IFNGR1 50	IFNGR2 51	IL10 52	IL11 53	IL12A 54	IL12B 55	IL12RB1 56
IL12RB2 57	IL13 58	IL13RA1 59	IL13RA2 60	IL15 61	IL16 62	IL17 63	IL18 64
IL18R1 65	IL19 66	IL1A 67	IL1B 68	IL2 69	IL21 70	IL2RA 71	IL2RG 72
IL3 73	IL4 74	IL4R 75	IL5 76	IL5RA 77	IL6 78	IL6R 79	IL6ST 80
IL7 81	IL8 82	IL8RA 83	IL8RB 84	IL9 85	IL9R 86	IRF4 87	JAK1 88
JAK3 89	KITLG 90	LCK 91	LGALS3 92	LTA 93	LTB4R 94	LTB4R2 95	LTBR 96
MS4A2 97	PDGFB 98	PTPRC 99	SFTPD 100	STAT6 101	SYK 102	TBX21 103	TGFB1 104
TNF 105	TNFRSF7 106	TNFSF13 107	TNFSF7 108	TNFSF8 109	TRAT1 110	TXLNA 111	XCL1 112
XCR1 113	YY1 114	PUC18 115	Blank 116	Blank 117	AS1R2 118	AS1R1 119	AS1 120
GAPD 121	B2M 122	HSPCB 123	HSPCB 124	ACTB 125	ACTB 126	BAS2C 127	BAS2C 128

Gene Table

Position	UniGene	GenBank	Symbol	Description	Gene Name
1	Hs.311640	NM_002954	RPS27A	Ribosomal protein S27a	CEP80/HURCEP80
2	Hs.72918	NM_002981	CCL1	Chemokine (C-C motif) ligand 1	I-309/P500
3	Hs.54460	NM_002986	CCL11	Chemokine (C-C motif) ligand 11	SCYA11
4	Hs.414629	NM_005408	CCL13	Chemokine (C-C motif) ligand 13	CKb10/MCP-4
5	Hs.546294	NM_002987	CCL17	Chemokine (C-C motif) ligand 17	ABCD-2/SCYA17
6	Hs.145981	NM_002988	CCL18	Chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)	AMAC-1/AMAC1
7	Hs.50002	NM_008274	CCL19	Chemokine (C-C motif) ligand 19	CKb11/ILC
8	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2	GDCF-2/GDCF-2 HC11
9	Hs.75498	NM_004591	CCL20	Chemokine (C-C motif) ligand 20	CKb4/LARC
10	Hs.534347	NM_002990	CCL22	Chemokine (C-C motif) ligand 22	ABCD-1/DC
11	Hs.247838	NM_002991	CCL24	Chemokine (C-C motif) ligand 24	Ckb-6/MP1F-2
12	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3	G0S19-1/LD78ALPHA
13	Hs.75703	NM_002984	CCL4	Chemokine (C-C motif) ligand 4	ACT2/G-26
14	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5	D17S136E/RANTES
15	Hs.251526	NM_006273	CCL7	Chemokine (C-C motif) ligand 7	FIC/MARC
16	Hs.271387	NM_005623	CCL8	Chemokine (C-C motif) ligand 8	HC14/MCP-2
17	Hs.278446	NM_016602	CCR10	Chemokine (C-C motif) receptor 10	GPR2
18	Hs.511794	NM_000648	CCR2	Chemokine (C-C motif) receptor 2	CC-CCR-2/CCR2A
19	Hs.506190	NM_001837	CCR3	Chemokine (C-C motif) receptor 3	CC-CCR-3/CCR3
20	Hs.184926	NM_005508	CCR4	Chemokine (C-C motif) receptor 4	CC-CCR-4/CCR4
21	Hs.450802	NM_000579	CCR5	Chemokine (C-C motif) receptor 5	CC-CCR-5/CCCKR5
22	Hs.46468	NM_004367	CCR6	Chemokine (C-C motif) receptor 6	BN-1/CCR-L3
23	Hs.370036	NM_001838	CCR7	Chemokine (C-C motif) receptor 7	BLR2/CDw197
24	Hs.113222	NM_005201	CCR8	Chemokine (C-C motif) receptor 8	CKR-1/CKRL1
25	Hs.1987	NM_006139	CD28	CD28 antigen (Tn44)	Tn44
26	Hs.472860	NM_001250	CD40	CD40 antigen (TNF receptor superfamily member 5)	Bp50/CDW40
27	Hs.652	NM_000074	CD40LG	CD40 ligand (TNF superfamily member 5, hyper-IgM syndrome)	CD154/CD40L
28	Hs.171182	NM_006889	CD86	CD86 antigen (CD28 antigen ligand 2, B7-2 antigen)	B7-2/B70
29	Hs.173894	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)	GM-CSF
30	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)	GM-CSF/GCSF
31	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)	ABCD-3/CSXkine
32	Hs.531668	NM_002996	CX3CL1	Chemokine (C-X3-C motif) ligand 1	ABCD-3/CD23A
33	Hs.78913	NM_001337	CX3CR1	Chemokine (C-X3-C motif) receptor 1	CCR1/1/CMKBR1
34	Hs.789	NM_001511	CXCL1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)	GRO1/GROa
35	Hs.75765	NM_002089	CXCL2	Chemokine (C-X-C motif) ligand 2	CINC-2a/GRO2
36	Hs.89690	NM_002090	CXCL3	Chemokine (C-X-C motif) ligand 3	CINC-2b/GRO3
37	Hs.201300	NM_006639	CYSLTR1	Cysteinyl leukotriene receptor 1	CYSLT1/CYSLT1R
38	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily member 6)	APT1/LG1/CD178
39	Hs.897	NM_002001	FCER1A	Fc fragment of IgE, high affinity I, receptor for: alpha polypeptide	FCER1A/FcERI
40	Hs.433300	NM_004106	FCER1G	Fc fragment of IgE, high affinity I, receptor for: gamma polypeptide	FCER1G
41	Hs.465778	NM_002002	FCER2	Fc fragment of IgE, low affinity II, receptor for (CD23A)	CD23/CD23A
42	Hs.284244	NM_002006	FGF2	Fibroblast growth factor 2 (basic)	BFGF/FGFB
43	Hs.25647	NM_005252	FOS	V-fos FBJ murine osteosarcoma viral oncogene homolog	c-fos
44	Hs.524134	NM_002051	GATA3	GATA binding protein 3	HDR
45	Hs.14155	NM_015259	ICOSLG	Inducible T-cell co-stimulator ligand	B7-H2/B7H2
46	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1	IFL/IFN
47	Hs.549042	NM_000874	IFNAR2	Interferon (alpha, beta and omega) receptor 2	IFN-R/IFN-alpha-REC
48	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast	IFB/IFF
49	Hs.856	NM_000619	IFNG	Interferon, gamma	IFG/IFI
50	Hs.520414	NM_000416	IFNGR1	Interferon gamma receptor 1	CD119/IFNGR
51	Hs.517240	NM_005534	IFNGR2	Interferon gamma receptor 2 (interferon gamma transducer 1)	AF-1/IEGR2
52	Hs.193717	NM_000572	IL10	Interleukin 10	CSIF/IL-10
53	Hs.467304	NM_000641	IL11	Interleukin 11	AGIF/IL-11
54	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation)	CLMF/IL-12A

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Position	UniGene	GenBank	Symbol	Description	Gene Name
55	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)	CLMF/CLMF2
56	Hs.567294	NM_005535	IL12RB1	Interleukin 12 receptor, beta 1	IL-12R-BETA1/IL12RB
57	Hs.479347	NM_001559	IL12RB2	Interleukin 12 receptor, beta 2	RP11-102M16.1
58	Hs.845	NM_002188	IL13	Interleukin 13	ALRH/IL-13
59	Hs.496646	NM_001560	IL13RA1	Interleukin 13 receptor, alpha 1	CD213A1/IL-13Ra
60	Hs.336046	NM_000640	IL13RA2	Interleukin 13 receptor, alpha 2	CD213A2/IL-13R
61	Hs.168132	NM_172175	IL15	Interleukin 15	IL-15
62	Hs.459095	NM_004513	IL16	Interleukin 16 (lymphocyte chemoattractant factor)	HsF19289/IL-16
63	Hs.41724	NM_002190	IL17	Interleukin 17 (cytotoxic T-lymphocyte-associated serine esterase 8)	CTLA8/IL-17
64	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)	IGIF/IL-18
65	Hs.469521	NM_003855	IL18R1	Interleukin 18 receptor 1	IL-1Rrp1/IL1RRP
66	Hs.128395	NM_013371	IL19	Interleukin 19	IL-19/CD144
67	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha	IL-1A/IL1
68	Hs.126256	NM_000576	IL1B	Interleukin 1, beta	IL-1/IL1-BETA
69	Hs.89679	NM_000586	IL2	Interleukin 2	IL-2/TCGF
70	Hs.567559	NM_021803	IL21	Interleukin 21	IL-21/Za11
71	Hs.231367	NM_000417	IL2RA	Interleukin 2 receptor, alpha	CD25/IL2R
72	Hs.84	NM_000206	IL2RG	Interleukin 2 receptor, gamma (severe combined immunodeficiency)	CD132/IMPD4
73	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)	IL-3/MCSF
74	Hs.73917	NM_000589	IL4	Interleukin 4	BSF1/IL-4
75	Hs.513457	NM_000418	IL4R	Interleukin 4 receptor	CD124/IL4RA
76	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)	EDF/IL-5
77	Hs.68876	NM_000564	IL5RA	Interleukin 5 receptor, alpha	CDw125/HSIL5R3
78	Hs.512234	NM_000600	IL6	Interleukin 6 (interferon, beta 2)	BSF2/HGF
79	Hs.135087	NM_000565	IL6R	Interleukin 6 receptor	CD126/IL-6R1
80	Hs.532082	NM_002184	IL6ST	Interleukin 6 signal transducer (gp130, oncostatin M receptor)	CD130/CDw130
81	Hs.536926	NM_000890	IL7	Interleukin 7	IL-7
82	Hs.624	NM_000584	IL8	Interleukin 8	B-10C/AMCF-1
83	Hs.194778	NM_000634	IL8RA	Interleukin 8 receptor, alpha	C-C CKR-1/C-C-CKR-1
84	Hs.846	NM_001557	IL8RB	Interleukin 8 receptor, beta	CDw128b/CMKAR2
85	Hs.960	NM_000590	IL9	Interleukin 9	HP40/IL-9
86	Hs.406228	NM_002186	IL9R	Interleukin 9 receptor	IL-9 Ra
87	Hs.401013	NM_002460	IRF4	Interferon regulatory factor 4	I-SIRF/MUM1
88	Hs.551505	NM_002227	JAK1	Janus kinase 1 (a protein tyrosine kinase)	JAK1/AJAK1B
89	Hs.515247	NM_000215	JAK3	Janus kinase 3 (a protein tyrosine kinase, leukocyte)	JAK-3/JAKL
90	Hs.1048	NM_003994	KITLG	KIT ligand	DKFZ686F2250/KL-1
91	Hs.470627	NM_005356	LCK	Lymphocyte-specific protein tyrosine kinase	LCK
92	Hs.531081	NM_002306	LGALS3	Lectin, galactoside-binding, soluble, 3 (galectin 3)	CBP35/GAL3
93	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)	LT/TNFB
94	Hs.567248	NM_181657	LTB4R	Leukotriene B4 receptor	BLT1/BLTR
95	Hs.130685	NM_019839	LTB4R2	Leukotriene B4 receptor 2	BLT2/BLTR2
96	Hs.1116	NM_002342	LTBR	Lymphotoxin beta receptor (TNFR superfamily, member 3)	CD18/CD125/370
97	Hs.386748	NM_000139	MS4A2	Membrane-spanning 4-domains, subfamily A, member 2 (Fc fragment of IgE, high affinity I, receptor for; beta polypeptide)	APY/ATOPY
98	Hs.1976	NM_002608	PDGFB	Platelet-derived growth factor beta polypeptide (simian sarcoma viral (v-sis) oncogene)	PDGF2/SIS
99	Hs.192039	NM_002838	PTPRC	Protein tyrosine phosphatase, receptor type, C	B220/CD45
100	Hs.253495	NM_003019	SFTPD	Surfactant, pulmonary-associated protein D	COLCE7/PSP-D
101	Hs.524518	NM_003153	STAT6	Signal transducer and activator of transcription 6, interleukin-4 induced	D12S1644/IL-4-STAT
102	Hs.371720	NM_003177	SYK	Spleen tyrosine kinase	Syk
103	Hs.272409	NM_013351	TBX21	T-box 21	T-PET/T-bet
104	Hs.1103	NM_000660	TGFB1	Transforming growth factor, beta 1 (Camurati-Engelmann disease)	CED/DPD1
105	Hs.241570	NM_000594	TNF	Tumor necrosis factor (TNF superfamily, member 2)	DIF/TNF-alpha
106	Hs.355307	NM_001242	TNFRSF7	Tumor necrosis factor receptor superfamily, member 7	CD27/S152
107	Hs.54673	NM_003808	TNFSF13	Tumor necrosis factor (ligand) superfamily, member 13	APRIL/TAL12
108	Hs.501497	NM_001252	TNFSF7	Tumor necrosis factor (ligand) superfamily, member 7	CD27/CD27LG
109	Hs.494901	NM_001244	TNFSF8	Tumor necrosis factor (ligand) superfamily, member 8	CD153/CD30L
110	Hs.138701	NM_016389	TRAF1	T cell receptor associated transmembrane adaptor 1	HSPC062/CRIM
111	Hs.17987	NM_175852	TXLNA	Taxilin alpha	DKFZ451J0118/TXLN
112	Hs.546295	NM_002995	XCL1	Chemokine (C motif) ligand 1	ATAC/LPTN
113	Hs.248116	NM_005283	XCR1	Chemokine (C motif) receptor 1	CCXCR1/GPR5
114	Hs.388927	NM_003403	YY1	YY1 transcription factor	DELTA/NF-E1
115	N/A	L08752	PUC18	PUC18 Plasmid DNA	pUC18
116	Blank	Blank	Blank	Blank	
117	Blank	Blank	Blank	Blank	
118	N/A	N/A	AS1R2	Artificial Sequence 1 Related 2 (80% identity)(48/60)	N/A
119	N/A	N/A	AS1R1	Artificial Sequence 1 Related 1 (90% identity)(56/60)	N/A
120	N/A	N/A	AS1	Artificial Sequence 1	N/A
121	Hs.544577	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase	G3PD/GAPD
122	Hs.534255	NM_004048	B2M	Beta-2-microglobulin	B2M
123	Hs.509736	NM_007355	HSPCB	Heat shock 90kDa protein 1, beta	D6S182/HSP90-BETA
124	Hs.509736	NM_007355	HSPCB	Heat shock 90kDa protein 1, beta	D6S182/HSP90-BETA
125	Hs.520640	NM_001101	ACTB	Actin, beta	b-Actin
126	Hs.520640	NM_001101	ACTB	Actin, beta	b-Actin
127	N/A	N/A	BAS2C	Biotinylated Artificial Sequence 2 Complementary sequence	N/A
128	N/A	N/A	BAS2C	Biotinylated Artificial Sequence 2 Complementary sequence	N/A