

Oligo GEMArray[®] DNA Microarray:

Mouse Asthma

Catalog Number

OMM-067
EMM-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, Ccl17, Ccl19, Ccl2, Ccl20, Ccl22, Ccl24, Ccl3, Ccl4, Ccl5, Ccl6, Ccl7, Ccl8, Cx3cl1, Cxcl1, Cxcl2, Xcl1.

Interferons: Ifna1, Ifnb1, Ifng, Ifngr1.

Interleukins: Csf3, Il10, Il11, Il12a, Il12b, Il13, Il15, Il16, Il17, Il18, Il19, Il1a, Il1b, Il2, Il21, Il2ra, Il2rg, Il3, Il4, Il5, Il6, Il7, Il9.

Tumor Necrosis Factor family: Cd40lg, Fasl, Lta, Tnf, Tnfsf12, Tnfsf7, Tnfsf8.

Other Cytokines: Ccr2, Csf1, Csf2, Fgf2, Tgfb1, Txlina.

Cytokine Receptors:

Chemokine Receptors: Ccr2, Ccr3, Ccr4, Ccr5, Ccr6, Ccr7, Ccr8, Cx3cr1, Gpr2 (Ccr10), Il8rb, Xcr1.

Interferon Receptors: Ifna1, Ifnar2, Ifnb1, Ifngr1, Ifngr2, Il12b, Il12rb1, Il12rb2, Il13, Il13ra1, Il13ra2, Il15, Il21, Il2rg, Il4, Il4ra, Il5ra, Il6ra, Il6st, Il7, Il9, Il9r.

Interleukin Receptors: Il12rb1, Il12rb2, Il13ra1, Il13ra2, Il18r1, Il4ra, Il5ra, Il6ra, Il8ra, Il8rb, Il9r.

Immune Response:

IgE Binding: Fcer1a, Fcer1g, Fcer2a, Lgals3, Ms4a2.

IgE Receptors: Cysl1r1, Fcer1a, Fcer2a, Ltb4r1, Ltb4r2, Ltbr.

Isotype Switching: Cd28, Cd40, Cd40lg, Icosl, Ifng, Il10, Il2, Il4, Msh2, Nbn, Swap70, Tbx21, Tgfb1.

T cell Activation: Cd28, Icosl, Il10, Il12b, Il15, Il18, Il2, Il2ra, Il4, Il7, Irf4, Itgal, Lck, Ptprc, Sftpd, Socs5, Syk, Tnfrsf7, Trat1.

T-helper 2 Type Immune Response: Il10, Socs5.

B cell Activation: Cd40, Cd40lg, Fcer1a, Fcer1g, Icosl, Il10, Il11, Il21, Il4, Il7, Msh2, Ptprc, Syk, Tnfrsf7.

Cytokine Biosynthesis: Cd28, Fcer1a, Fcer1g, Gata3, Icosl, Ifng, Il10, Il12b, Il18, Il19, Il1b, Il2ra, Il6, Il9, Irf4, Ptprc, Sftpd, Syk, Tnfrsf7.

Humoral Immune Response: Ccr2, Cd28, Il12b, Lta, Tnf.

Other Genes Involved in the Immune Response: Ccl1, Ccl11, Ccl17, Ccl19, Ccl2, Ccl20, Ccl22, Ccl24, Ccl3, Ccl4, Ccl5, Ccl6, Ccl7, Ccl8, Ccr4, Ccr7, Csf2, Csf3, Cx3cl1, Cxcl1, Cxcl2, Fasl, Il12a, Il13, Il17, Il1a, Il3, Il4ra, Il5, Tnfsf12, Tnfsf7, Tnfsf8, Xcl1.

Response to Stimulus:

Response to Biotic Stimulus: Fcer1g, Ifna1, Ifnb1, Ifng, Il10, Ptprc, Tnf.

Response to Chemical Stimulus: Ccl1, Ccl11, Ccl17, Ccl19, Ccl2, Ccl20, Ccl22, Ccl24, Ccl3, Ccl4, Ccl5, Ccl6, Ccl7, Ccl8, Ccr10, Ccr2, Ccr3, Ccr4, Ccr5, Ccr7, Ccr8, Cxcl2, Fcer1g, Ifng, Il16, Il1b, Il8ra, Il8rb, Sftpd, Xcl1.

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Response to Virus: Ifna1, Ifnb1, Ifng, Il15.

Sensory Perception: Ccl1, Ccl11, Ccl19, Ccl2, Ccl20, Ccl22, Ccl24, Ccl3, Ccl4, Ccl5, Ccl6, Ccl7, Ccl8, Ccr2, Cxcl2, Il16, Il8rb, Tnf, Xcl1.

Other Genes Involved in the Response to Stimulus: Cd40lg, Cd86, Fcer2a, Icosl, Itgal, Lck, Msh2, Nbn, Tgfb1.

Th2 Cytokine Signaling Pathway: Fos, Gata3, Jak1, Jak3, Stat6, Tbx21, Tgfb1, Yy1.

Apoptosis:

Anti-apoptosis: Cd28, Cd40lg, Il10, Il4, Il7, Msh2, Tnfrsf7.

Induction of Apoptosis: Cd28, Fasl, Il18, Il19, Lck, Tnf, Tnfrsf7.

Other Genes Involved in Apoptosis: Cd40, Csf2, Fgf2, Ifng, Il2ra, Il3, Il6, Il8rb, Lta, Ltbr, Tnfsf12.

Transcription Factors and Regulators: Ccl5, Fos, Gata3, Ifnar2, Ifng, Il2, Il4, Irf4, Jak3, Nbn, 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.
14. Rajakulasingam, K., *et al.* (1998) Increased expression of high affinity IgE (FcepsilonRI) receptor-alpha chain mRNA and protein-bearing eosinophils in human allergen-induced atopic asthma. *Am J Respir Crit Care Med.* **158**(1), 233-40.

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Oligo GEArray® Mouse Asthma Microarray

Array Layout:

Gapdh 1	Ccl1 2	Ccl11 3	Ccl17 4	Ccl19 5	Ccl2 6	Ccl20 7	Ccl22 8
Ccl24 9	Ccl3 10	Ccl4 11	Ccl5 12	Ccl6 13	Ccl7 14	Ccl8 15	Ccr2 16
Ccr3 17	Ccr4 18	Ccr5 19	Ccr6 20	Ccr7 21	Ccr8 22	Cd28 23	Cd40 24
Cd40la 25	Cd86 26	Csf1 27	Csf2 28	Csf3 29	Cx3cl1 30	Cx3cr1 31	Cxcl1 32
Cxcl2 33	Cvsltr1 34	Fasli 35	Fcer1a 36	Fcer1a 37	Fcer2a 38	Fof2 39	Fos 40
Gata3 41	Gpr2 42	Icosl 43	Ifna1 44	Ifnar2 45	Ifnb1 46	Ifna 47	Ifnar1 48
Ifnar2 49	Il10 50	Il11 51	Il12a 52	Il12b 53	Il12rb1 54	Il12rb2 55	Il13 56
Il13ra1 57	Il13ra2 58	Il15 59	Il16 60	Il17 61	Il18 62	Il18r1 63	Il19 64
Il1a 65	Il1b 66	Il2 67	Il21 68	Il2ra 69	Il2ra 70	Il3 71	Il4 72
Il4ra 73	Il5 74	Il5ra 75	Il6 76	Il6ra 77	Il6st 78	Il7 79	Il8ra 80
Il8rb 81	Il9 82	Il9r 83	Ilr4 84	Itolal 85	Jak1 86	Jak3 87	Lck 88
Loals3 89	Lta 90	Ltb4r1 91	Ltb4r2 92	Ltrb 93	Ms4a2 94	Msh2 95	Nbn 96
Ptprc 97	Sfrnd 98	Sox5 99	Stat6 100	Swao70 101	Svk 102	Tbv21 103	Tcfb1 104
Tnf 105	Tnfrsf7 106	Tnfrsf12 107	Tnfrsf7 108	Tnfrsf8 109	Trat1 110	Txlna 111	Xcl1 112
Xcr1 113	Yv1 114	PUC18 115	Blank 116	Blank 117	AS1R2 118	AS1R1 119	AS1 120
Ros27a 121	B2m 122	Hspcb 123	Hspcb 124	Poia 125	Poia 126	BAS2C 127	BAS2C 128

Gene Table

Position	UniGene	GenBank	Symbol	Description	Gene Name
1	Mm.333399	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase	Gapd
2	Mm.1283	NM_011329	Ccl1	Chemokine (C-C motif) ligand 1	BF534335/1-309
3	Mm.4686	NM_011330	Ccl11	Small chemokine (C-C motif) ligand 11	Scva11/ecotaxin
4	Mm.41988	NM_011332	Ccl17	Chemokine (C-C motif) ligand 17	ABCD-2/Scva17
5	Mm.379051	NM_011888	Ccl19	Chemokine (C-C motif) ligand 19	CKb1/ELC
6	Mm.280320	NM_011333	Ccl2	Chemokine (C-C motif) ligand 2	A1323594/Hc11
7	Mm.116739	NM_016960	Ccl20	Chemokine (C-C motif) ligand 20	CKb4/ARC
8	Mm.12895	NM_009137	Ccl22	Chemokine (C-C motif) ligand 22	ABCD-1/DCBCK
9	Mm.31505	NM_019577	Ccl24	Chemokine (C-C motif) ligand 24	CKb-6/MP1E-2
10	Mm.1282	NM_011337	Ccl3	Chemokine (C-C motif) ligand 3	A1323804/G0S19-1
11	Mm.244263	NM_013652	Ccl4	Chemokine (C-C motif) ligand 4	Act-2/MIP-1B
12	Mm.284248	NM_013653	Ccl5	Chemokine (C-C motif) ligand 5	MuRantes/RANTES
13	Mm.137	NM_009139	Ccl6	Chemokine (C-C motif) ligand 6	MRP-1/Scva6
14	Mm.341574	NM_013654	Ccl7	Chemokine (C-C motif) ligand 7	MCP-3/Scva7
15	Mm.42029	NM_021443	Ccl8	Chemokine (C-C motif) ligand 8	1810063B20Rik/AB023418
16	Mm.6272	NM_009915	Ccr2	Chemokine (C-C motif) receptor 2	CC-CKR-2/CCR2A
17	Mm.57050	NM_009914	Ccr3	Chemokine (C-C motif) receptor 3	CC-CKR3/CKR3
18	Mm.1337	NM_009916	Ccr4	Chemokine (C-C motif) receptor 4	Cmkb4/LESTR
19	Mm.14302	NM_009917	Ccr5	Chemokine (C-C motif) receptor 5	AM4-7/CD195
20	Mm.8007	NM_009835	Ccr6	Chemokine (C-C motif) receptor 6	Cmkb6
21	Mm.2932	NM_007719	Ccr7	Chemokine (C-C motif) receptor 7	CD197/Cdw197
22	Mm.8000	NM_007720	Ccr8	Chemokine (C-C motif) receptor 8	Cmkb8/mCCR8
23	Mm.255003	NM_007642	Cd28	CD28 antigen	CD28
24	Mm.271833	NM_011611	Cd40	CD40 antigen	A1326936/Bp50
25	Mm.4861	NM_011616	Cd40la	CD40 ligand	CD154/Cd40l
26	Mm.1452	NM_019388	Cd86	CD86 antigen	B7/B7-2
27	Mm.795	NM_007778	Csf1	Colony stimulating factor 1 (macrophage)	C87615/CSF-1
28	Mm.4922	NM_009969	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)	Csf2m/Gm-CSF
29	Mm.1238	NM_009971	Csf3	Colony stimulating factor 3 (granulocyte)	Csf3r/G-CSF
30	Mm.103711	NM_008142	Cx3cl1	Chemokine (C-X3-C motif) ligand 1	AB030188/ABCD-3
31	Mm.44085	NM_009997	Cx3cr1	Chemokine (C-X3-C) receptor 1	CX3CR1
32	Mm.21013	NM_008176	Cxcl1	Chemokine (C-X-C motif) ligand 1	Fsp/Gro1
33	Mm.4979	NM_009140	Cxcl2	Chemokine (C-X-C motif) ligand 2	CINC-2a/GROb
34	Mm.287166	NM_021476	Cvsltr1	Cysteine leukotriene receptor 1	BB147369/CvslTR1R
35	Mm.3355	NM_010177	Fasli	Fas ligand (TNF superfamily, member 6)	APT1/LG1/CD178
36	Mm.5266	NM_010184	Fcer1a	Fc receptor, IgE, high affinity I, alpha polypeptide	FcER1/Fcε1a
37	Mm.22673	NM_010185	Fcer1g	Fc receptor, IgE, high affinity I, gamma polypeptide	A1573376/CD23
38	Mm.1233	NM_013517	Fcer2a	Fc receptor, IgE, low affinity II, alpha polypeptide	CD23/Fcε2
39	Mm.57094	NM_008006	Fof2	Fibroblast growth factor 2	Fof-2/Fob
40	Mm.246513	NM_010234	Fos	FBJ osteosarcoma oncogene	D12Rf1/c-fos
41	Mm.313866	NM_008091	Gata3	GATA binding protein 3	Gata-3
42	Mm.103813	XM_894888	Gpr2	7-transmembrane G-protein coupled receptor 2 (Gpr2)	Cmkb9/Ccr10
43	Mm.17819	NM_015790	Icosl	Icos ligand	AU044799/B7-H2
44	Mm.57127	NM_010502	Ifna1	Interferon alpha family, gene 1	Ifa1
45	Mm.6834	NM_010509	Ifnar2	Interferon (alpha and beta) receptor 2	A1747302/Ifnar-2
46	Mm.1245	NM_010510	Ifnb1	Interferon beta 1, fibroblast	IFNB/Ifb
47	Mm.240327	NM_008337	Ifng	Interferon gamma	IFN-g/IFN-gamma
48	Mm.549	NM_010511	Ifnar1	Interferon gamma receptor 1	CD119/IFN-gamma R
49	Mm.249364	NM_008338	Ifnar2	Interferon gamma receptor 2	Ifar2/Itat
50	Mm.874	NM_010548	Il10	Interleukin 10	CSIF/Il-10
51	Mm.35814	NM_008350	Il11	Interleukin 11	Il-11
52	Mm.103783	NM_008351	Il12a	Interleukin 12A	Il-12p35/Il-12a
53	Mm.239707	NM_008352	Il12b	Interleukin 12B	Il-12b/Il-12p40
54	Mm.731	NM_008353	Il12rb1	Interleukin 12 receptor, beta 1	CD212/IL-12RB1

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Position	UniGene	GenBank	Symbol	Description	Gene Name
55	Mm.188337	NM_008354	Il12rb2	Interleukin 12 receptor, beta 2	AS30027118Rik/IL-12RB2
56	Mm.1284	NM_008355	Il13	Interleukin 13	IL13
57	Mm.24208	NM_133990	Il13ra1	Interleukin 13 receptor, alpha 1	A182074/CD213a1
58	Mm.368330	NM_008356	Il13ra2	Interleukin 13 receptor, alpha 2	CD213a2
59	Mm.4392	NM_008357	Il15	Interleukin 15	A1503619
60	Mm.10137	NM_010551	Il16	Interleukin 16	mKIAA4048
61	Mm.5419	NM_010552	Il17	Interleukin 17	Ctla-8/Ctla8
62	Mm.1410	NM_008360	Il18	Interleukin 18	Il1f/IL-18
63	Mm.253664	NM_008365	Il18r1	Interleukin 18 receptor 1	Il18alpha/Il1rrp
64	Mm.131480	NM_001009940	Il19	Interleukin 19	IL19
65	Mm.15534	NM_010554	Il1a	Interleukin 1 alpha	IL-1a
66	Mm.222830	NM_008361	Il1b	Interleukin 1 beta	IL-1beta/IL-1b
67	Mm.14190	NM_008366	Il2	Interleukin 2	IL-2
68	Mm.157689	NM_021782	Il21	Interleukin 21	IL21
69	Mm.915	NM_008367	Il2ra	Interleukin 2 receptor, alpha chain	CD25/Il2r
70	Mm.2923	NM_013563	Il2rg	Interleukin 2 receptor, gamma chain	CD132/Il2c
71	Mm.983	NM_010556	Il3	Interleukin 3	Csfm/IL-3
72	Mm.276360	NM_021283	Il4	Interleukin 4	IgG/IL-4
73	Mm.233802	NM_010557	Il4ra	Interleukin 4 receptor, alpha	CD124/Il4r
74	Mm.4461	NM_010558	Il5	Interleukin 5	IL-5
75	Mm.3448	NM_008370	Il5ra	Interleukin 5 receptor, alpha	CD125/CDw125
76	Mm.1019	NM_031168	Il6	Interleukin 6	IL-6
77	Mm.2856	NM_010559	Il6ra	Interleukin 6 receptor, alpha	CD126/IL-6R
78	Mm.4364	NM_010560	Il6st	Interleukin 6 signal transducer	5133400A03Rik/AA389424
79	Mm.3825	NM_008371	Il7	Interleukin 7	IL7
80	Mm.337035	NM_178241	Il8ra	Interleukin 8 receptor, alpha	CXCR1
81	Mm.234466	NM_009909	Il8rb	Interleukin 8 receptor, beta	CD128/CDw128
82	Mm.3006	NM_008372	Il9	Interleukin 9	IL-9
83	Mm.384	NM_008374	Il9r	Interleukin 9 receptor	IL9R
84	Mm.4677	NM_013674	Ilrf4	Interferon regulatory factor 4	A1385587L/SIRF
85	Mm.1618	NM_008400	Iltoal	Integrin, alpha L	Cd11a/IL-FA-1
86	Mm.289657	NM_146145	Jak1	Janus kinase 1	AA960307/C130039L05Rik
87	Mm.249645	NM_010589	Jak3	Janus kinase 3	fae
88	Mm.293753	NM_010693	Lck	Lymphocyte protein tyrosine kinase	Hck-3/p56
89	Mm.248615	NM_010705	Lgals3	Lectin, galactose binding, soluble 3	GBP/L-34
90	Mm.87787	NM_010735	Lta	Lymphotoxin A	LT/LT-1a
91	Mm.20853	NM_008519	Ltb4r1	Leukotriene B4 receptor 1	BLT1/BLTR
92	Mm.159670	NM_020490	Ltb4r2	Leukotriene B4 receptor 2	58304620O7Rik/BLT2
93	Mm.3122	NM_010736	Ltbr	Lymphotoxin B receptor	A1256028/CD18
94	Mm.329735	NM_013516	Ms4a2	Membrane-spanning 4-domains, subfamily A, member 2	Fcε1b/Fcε1b
95	Mm.4619	NM_008628	Msh2	MutS homolog 2 (E. coli)	A1788990
96	Mm.20866	NM_013752	Nbn	Nibrin	Nbs1
97	Mm.383399	NM_011210	Ptprc	Protein tyrosine phosphatase, receptor type, C	B220/CD45R
98	Mm.1321	NM_009160	Sftpd	Surfactant associated protein D	A1573415/SP-D
99	Mm.126885	NM_019654	Socs5	Suppressor of cytokine signaling 5	1810018L08Rik/Cish5
100	Mm.121721	NM_009284	Stat6	Signal transducer and activator of transcription 6	STAT6
101	Mm.334144	NM_009302	Swap70	SWA-70 protein	70kDa/AV235546
102	Mm.375031	NM_011518	SVK	Spleen tyrosine kinase	SYK
103	Mm.94519	NM_019507	Tbx21	T-box 21	T-bet/TBT1
104	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1	TGF-beta1/Tgfb
105	Mm.1293	NM_013693	Tnf	Tumor necrosis factor	DIF/TNF-alpha
106	Mm.367714	NM_001033126	Tnfrsf7	Tumor necrosis factor receptor superfamily, member 7	Ccr27/S152
107	Mm.344820	NM_011614	Tnfrsf12	Tumor necrosis factor (ligand) superfamily, member 12	AP03L/DR3L
108	Mm.42228	NM_011617	Tnfrsf7	Tumor necrosis factor (ligand) superfamily, member 7	CD27L/C/CD27
109	Mm.4664	NM_009403	Tnfrsf8	Tumor necrosis factor (ligand) superfamily, member 8	CD153/CD30/G
110	Mm.167298	NM_198297	Trat1	T cell receptor associated transmembrane adaptor 1	C030046M14Rik/Tcrim
111	Mm.268863	NM_001005506	Txlna	Taxilin alpha	2600010N21Rik/AI425952
112	Mm.190	NM_008510	Xcl1	Chemokine (C motif) ligand 1	A1661682/ATAC
113	Mm.89202	NM_011798	Xcr1	Chemokine (C motif) receptor 1	Cxcr1/GPR5
114	Mm.3868	NM_009537	Yv1	YY1 transcription factor	AW488674/NF-E1
115	N/A	L08752	PUC18	PUC18 Plasmid DNA	hUC18
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	Mm.180003	NM_024277	Ros27a	Ribosomal protein S27a	Rps27a
122	Mm.163	NM_009735	B2m	Beta-2 microglobulin	BETA2-M/L/Y-M11
123	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	90KDA/HSPB4
124	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	90KDA/HSPB4
125	Mm.5246	NM_008907	Ppia	Peptidylprolyl isomerase A	2700098C05/CPHN
126	Mm.5246	NM_008907	Ppia	Peptidylprolyl isomerase A	2700098C05/CPHN
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