

# Oligo GEMArray<sup>®</sup> DNA Microarray: Mouse Chemokines and Receptors

## Catalog Number

OMM-022  
EMM-022

## Format:

HybTube (Standard protocol)  
HybPlate (Higher throughput protocol)

## Description

The Oligo GEMArray<sup>®</sup> Mouse Chemokines and Receptors Microarray profiles the expression of 114 genes related to chemokines and their regulation. This array includes all of the subfamilies of small inducible cytokines. The C-C motif chemokine ligands are represented along with their receptors. The C-X-C motif chemokine ligands and receptors are also included. Other genes playing a role in regulating chemokines and their receptors are also contained in this array. Through a simple side-by-side hybridization experiment you can determine differential gene expression between your samples.

## Functional Gene Groupings

**Chemokine (C-C Motif) Ligands:** Ccl1 (Scya1 / TCA3), Ccl2 (Scya2 / JE), Ccl3 (Scya3 / MIP-1 $\alpha$ ), Ccl4 (Scya4 / MIP-1 $\beta$ ), Ccl5 (Scya5 / RANTES), Ccl6 (Scya6 / C10), Ccl7 (Scya7 / MARC), Ccl8 (Scya8 / MCP-2), Ccl9 (Scya9 / MRP-2 / MIP-1r), Ccl11 (Scya11 / eotaxin), Ccl12 (Scya12 / mcp-5), Ccl17 (Scya17 / TARC / ABCD-2), Ccl19 (Scya19 / MIP-3 $\beta$  / ELC), Ccl20 (Scya20 / MIP-3 $\alpha$  / LARC), Ccl21a (Scya21 / SLC / exodus-2), Ccl22 (Scya22 / MDC / ABCD-1), Ccl24 (Scya24 / MPIF-2 / eotaxin-2), Ccl25 (Scya25, TECK), Ccl27 (Scya27 / ALP / mLIC), Ccl28 (Scya28 / MEC).

**Chemokine (C-X-C Motif) Ligands:** Cxcl1 (Scyb1), Cxcl2 (Scyb2 / MIP2), Cxcl4 (Scyb4), Cxcl5 (Scyb5 / Scyb6 / LIX / GCP-2 / ENA-78), Cxcl9 (Scyb9, Mig), Cxcl10 (Scyb10 / IP-10), Cxcl11 (Scyb11), Cxcl12 (Scyb12), Cxcl13 (Scyb13 / angie2 / BLC), Cxcl14 (Scyb14 / Kec / Bmac / MIP-2g), Cxcl15 (Scyb15), Cxcl16 (SR-PSOX).

**Chemokine (C-C Motif) Receptors:** Ccr1, Ccr11, Ccr2, Ccr3, Ccr4, Ccr5, Ccr6 (Cmkbr6), Ccr7, Ccr8 (Cmkbr8), Ccr9, Ccr11, Ccr12.

**Chemokine (C-X-C Motif) Receptors:** Blr1, Cxcr3 (Cmkar3), Cxcr4 (Cmkar4), Cxcr6, Cyfp2.

**Other Chemokines and Related Genes:** Agtr1, Arts1, Bdnf, Bmp10, Bmp15, Bmp6, Ccbp2, Cklfsf2a, Cklfsf2b, Cklfsf3, Cklfsf4, Cklfsf5, Cklfsf6, Cklfsf7, Cklfsf8, Cmk1r1, Cmkor1, Csf1, Csf2, Csf3, Cx3cl1 (Scyd1 / fractalkine / neurotactin), Cx3cr1, Cxcl7, Dfy, Ecgf1, Epo, Gdf5, Gpr109b, Gpr2 (Cmkbr9), Gpr77, Gpr81, Hc, Hif1a, Il13, Il16, Il18, Il1a, Il4, Il8ra, Il8rb (Cmkar2), Inha, Inhbb, Lif, Lmtn, Ltbr4r2, Mmp2, Mmp7, Myd88, Nfkb1, Prl, Rgs13, Rgs3, Scye1, Sdf2, Slit2, Tapbp, Tcpl0b, Tlr2, Tlr4, Tnf, Tnfrsf1a, Tnfsf14, Trem1, Xcl1 (Scyc1 / lymphotactin / Lptn), Xcr1 (Ccxcr1).

## 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.**

GEMArray microarrays are shipped at ambient temperature enclosed in either a HybTube or ExpressPak Storage Box. They should be stored at  $-20^{\circ}\text{C}$  upon receipt.

## **References**

1. Sallusto F, Mackay CR, Lanzavecchia A (2000) The Role Of Chemokine Receptors In Primary, Effector, and Memory Immune Responses. *Annu. Rev. Immunol* **18**: 593-620.
2. Rossi D, Zlotnik A (2000) The Biology Of Chemokines And Their Receptors. *Annu. Rev. Immunol* **18**: 217-242.
3. Zlotnik A, Yoshie O (2000) Chemokines: A New Classification System And Their Role In Immunity. *Immunity* **12**: 121-127.
4. Krishna Vaddi, Margaret Keller, Robert C. Newton, editors. (1997) *The Chemokine Facts Book*. Academic Press.
5. James J Campbell and Eugene C Butcher (2000) Chemokines In Tissue-Specific And Microenvironment-Specific Lymphocyte Homing. *Current Opinion in Immunology* **12**: 336-341.

Product Specification Sheet

Oligo GEArray® Mouse Chemokines and Receptors Microarray

**Array Layout:**

Gapd 1	Areg 2	Arts1 3	Bmp1 4	Bmp10 5	Bmp15 6	Bmp2 7	Bmp3 8
Bmp4 9	Bmp5 10	Bmp6 11	Bmp7 12	Bmp8b 13	Csf1 14	Csf2 15	Csf3 16
Ctf1 17	Ctf2 18	Eda 19	Fbs1 20	Fgf10 21	Flt3l 22	Gdf1 23	Gdf10 24
Gdf11 25	Gdf15 26	Gdf2 27	Gdf3 28	Gdf5 29	Gdf8 30	Gdf9 31	Gpi1 32
Gm 33	Ifna1 34	Ifna12 35	Ifna13 36	Ifna2 37	Ifna4 38	Ifna5 39	Ifna6 40
Ifna7 41	Ifnb1 42	Ifng 43	Ik 44	Il10 45	Il11 46	Il12a 47	Il12b 48
Il13 49	Txin 50	Il15 51	Il16 52	Il17 53	Il17b 54	Il17c 55	Il17e 56
Il17f 57	Il18 58	Il19 59	Il1a 60	Il1b 61	Il1f10 62	Il1f5 63	Il1f6 64
Il1f8 65	Il1f9 66	Il1m 67	Il2 68	Il20 69	Il21 70	Il22 71	Il24 72
Il27 73	Il3 74	Il4 75	Il5 76	Il6 77	Il7 78	Il9 79	Inha 80
Inhba 81	Inhbb 82	Kitl 83	Lefty1 84	Lif 85	Lmtn 86	Lta 87	Ltb 88
Mif 89	Nodal 90	Nrg1 91	Oit1 92	Osm 93	S100a11 94	Scgb3a1 95	Scye1 96
Spp1 97	Thpo 98	Tnf 99	Tnfrsf11b 100	Tnfrsf10 101	Tnfrsf11 102	Tnfrsf12 103	Tnfrsf13 104
Tnfrsf13b 105	Tnfrsf14 106	Tnfrsf15 107	Tnfrsf18 108	Tnfrsf4 109	Tnfrsf5 110	Fasl 111	Tnfrsf7 112
Tnfrsf8 113	Tnfrsf9 114	PUC18 115	Blank 116	Blank 117	AS1R2 118	AS1R1 119	AS1 120
Rps27a 121	B2m 122	Hspcb 123	Hspcb 124	Ppia 125	Ppia 126	BAS2C 127	BAS2C 128

**Gene Table**

Position	UniGene	GenBank	Symbol	Description	Gene Name
1	Mm.333399	NM_008084	Gapd	Glyceraldehyde-3-phosphate dehydrogenase	GAPDH
2	Mm.8039	NM_009704	Areg	Amphiregulin	AR/SDGF
3	Mm.83526	NM_030711	Arts1	Type 1 tumor necrosis factor receptor shedding aminopeptidase regulator	ERAAP/MGI:1933403
4	Mm.27757	NM_009755	Bmp1	Bone morphogenetic protein 1	TLD
5	Mm.349334	NM_009756	Bmp10	Bone morphogenetic protein 10	BMP10
6	Mm.42160	NM_009757	Bmp15	Bone morphogenetic protein 15	BMP-15/GDF-9B
7	Mm.103205	NM_007553	Bmp2	Bone morphogenetic protein 2	BMP2A
8	Mm.209571	NM_173404	Bmp3	Bone morphogenetic protein 3	9130206H07
9	Mm.6813	NM_007554	Bmp4	Bone morphogenetic protein 4	BMP2B/BMP2B-1
10	Mm.118034	NM_007555	Bmp5	Bone morphogenetic protein 5	SE
11	Mm.374781	NM_007556	Bmp6	Bone morphogenetic protein 6	D13WSU115E/VGR-1
12	Mm.595	NM_007557	Bmp7	Bone morphogenetic protein 7	OP1
13	Mm.30413	NM_007559	Bmp8b	Bone morphogenetic protein 8b	OP3
14	Mm.795	NM_007778	Csf1	Colony stimulating factor 1 (macrophage)	CSF-1/CSFM
15	Mm.4922	NM_009969	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)	CSFGM/GM-CSF
16	Mm.1238	NM_009971	Csf3	Colony stimulating factor 3 (granulocyte)	CSFG/G-CSF
17	Mm.249829	NM_007795	Ctf1	Cardiotrophin 1	CT-1
18	Mm.298017	NM_198858	Ctf2	Cardiotrophin 2	GM494/NP
19	Mm.328086	NM_010099	Eda	Ectodysplasin-A	ED1/EDA-A1
20	Mm.334244	XM_284344	Fbs1	Fibrosin 1	FBS
21	Mm.317323	NM_008002	Fgf10	Fibroblast growth factor 10	FGF-10
22	Mm.1658	NM_013520	Flt3l	FMS-like tyrosine kinase 3 ligand	LY72L
23	Mm.258280	NM_008107	Gdf1	Growth differentiation factor 1	GDF-1/UOG-1
24	Mm.40323	NM_145741	Gdf10	Growth differentiation factor 10	GDF10
25	Mm.299218	XM_125935	Gdf11	Growth differentiation factor 11	BMP11
26	Mm.31325	NM_011819	Gdf15	Growth differentiation factor 15	MIC-1/SBF
27	Mm.343728	NM_019506	Gdf2	Growth differentiation factor 2	Bmp9
28	Mm.299742	NM_008108	Gdf3	Growth differentiation factor 3	GDF-3/VGR-2
29	Mm.4744	NM_008109	Gdf5	Growth differentiation factor 5	BP/CDMP-1
30	Mm.3514	NM_010834	Gdf8	Growth differentiation factor 8	CMPT/COMPACT
31	Mm.9714	NM_008110	Gdf9	Growth differentiation factor 9	GDF-9
32	Mm.589	NM_008155	Gpi1	Glucose phosphate isomerase 1	AMF/GPI-1
33	Mm.1568	NM_008175	Gm	Granulin	EPITHELIN
34	Mm.57127	NM_010502	Ifna1	Interferon alpha family, gene 1	IFA1
35	Mm.246618	NM_177361	Ifna12	Interferon alpha family, gene 12	IFNA12
36	Mm.246592	NM_177347	Ifna13	Interferon alpha family, gene 13	IFNA13
37	Mm.14091	NM_010503	Ifna2	Interferon alpha family, gene 2	IFA2
38	Mm.57128	NM_010504	Ifna4	Interferon alpha family, gene 4	IFNA4
39	Mm.57129	NM_010505	Ifna5	Interferon alpha family, gene 5	IFNA5
40	Mm.6194	NM_008335	Ifna6	Interferon alpha family, gene 6	IFNA6
41	Mm.46795	NM_008334	Ifna7	Interferon alpha family, gene 7	IFNA7

## Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description	Gene Name
42	Mm.1245	NM_010510	ifnb1	Interferon beta 1, fibroblast	IFB/IFNB
43	Mm.240327	NM_008337	ifng	Interferon gamma	IFG/IFN-G
44	Mm.30234	NM_011879	ik	IK cytokine	MURED
45	Mm.874	NM_010548	il10	Interleukin 10	CSIF/IL-10
46	Mm.35814	NM_008350	il11	Interleukin 11	IL-11
47	Mm.103783	NM_008351	il12a	Interleukin 12A	IL-12A/IL-12P35
48	Mm.239707	NM_008352	il12b	Interleukin 12B	IL-12B/IL-12P40
49	Mm.1284	NM_008355	il13	Interleukin 13	IL-13
50	Mm.268863	NM_001005506	Txin	Taxilin	MGI:105968
51	Mm.4392	NM_008357	il15	Interleukin 15	IL15
52	Mm.10137	NM_010551	il16	Interleukin 16	KIAA4048
53	Mm.5419	NM_010552	il17	Interleukin 17	CTLA-8/CTLA8
54	Mm.59313	NM_019508	il17b	Interleukin 17B	ZCYTO7
55	Mm.222808	NM_145834	il17c	Interleukin 17C	IL-17C
56	Mm.90154	NM_080729	il17e	Interleukin 17E	IL-17E/IL25
57	Mm.222807	NM_145856	il17f	Interleukin 17F	IL-17F
58	Mm.357587	NM_008360	il18	Interleukin 18	IGIF/IL-18
59	Mm.131480	NM_001009940	il19	Interleukin 19	IL19
60	Mm.15534	NM_010554	il1a	Interleukin 1 alpha	IL-1A
61	Mm.222830	NM_008361	il1b	Interleukin 1 beta	IL-1B/IL-1BETA
62	Mm.218750	NM_153077	il1f10	Interleukin 1 family, member 7	IL1F10
63	Mm.29261	NM_019451	il1f5	Interleukin 1 family, member 5 (delta)	FIL1DELTA/IL-1H3
64	Mm.133095	NM_019450	il1f6	Interleukin 1 family, member 6	FIL1/IL-1H1
65	Mm.45901	XM_130058	il1f8	Interleukin 1 family, member 8	2310043N20RIK
66	Mm.249379	NM_153511	il1f9	Interleukin 1 family, member 9	IL1F9
67	Mm.882	NM_031167	il1rn	Interleukin 1 receptor antagonist	IL-1RA
68	Mm.14190	NM_008366	il2	Interleukin 2	CYTOKINE/IL-2
69	Mm.103794	NM_021380	il20	Interleukin 20	ZCYTO10
70	Mm.157689	NM_021782	il21	Similar to interleukin 21	IL21
71	Mm.103585	NM_016971	il22	Interleukin 22	IL-22/IL-TIF
72	Mm.196691	NM_053095	il24	Interleukin 24	FISP/MDA-7
73	Mm.222632	NM_145636	il27	Interleukin 27	IL-27/IL30
74	Mm.983	NM_010556	il3	Interleukin 3	CSFMU/IL-3
75	Mm.276360	NM_021283	il4	Interleukin 4	IGG1/IL-4
76	Mm.4461	NM_010558	il5	Interleukin 5	IL-5
77	Mm.1019	NM_031168	il6	Interleukin 6	IL-6
78	Mm.3825	NM_008371	il7	Interleukin 7	IL-7
79	Mm.3006	NM_008373	il9	Interleukin 9	IL-9
80	Mm.1100	NM_010564	inhb	Inhibin alpha	INHb
81	Mm.8042	NM_008380	inhba	Inhibin beta-A	INHbA
82	Mm.3092	XM_148966	inhbb	Inhibin beta-B	INHbB
83	Mm.45124	NM_013598	Kitl	Kit ligand	CLO/CON
84	Mm.87078	NM_010094	Lefty1	Left right determination factor 1	LEFTB/LEFTY
85	Mm.4964	NM_008501	Lif	Leukemia inhibitory factor	LIF
86	Mm.149203	NM_197889	Lmtln	Limitin	BGIF/IFNZ
87	Mm.87787	NM_010735	Lta	Lymphotoxin A	LT/LT-ALPHA
88	Mm.1715	NM_008518	Ltb	Lymphotoxin B	LTBETA/P33
89	Mm.2326	NM_010798	Mif	Macrophage migration inhibitory factor	GIF/GLIF
90	Mm.57195	NM_013611	Nodal	Nodal	TG.413D
91	Mm.153432	NM_178591	Nrg1	Neuregulin 1	ARIA/GGF
92	Mm.25351	NM_146050	Oit1	Oncoprotein induced transcript 1	EF-7
93	Mm.131422	NM_001013365	Osm	Oncostatin M	OSM
94	Mm.280038	NM_016740	S100a11	S100 calcium binding protein A11 (calizzarin)	CAL/EMAP1
95	Mm.22802	NM_170727	Scgb3a1	Secretoglobin, family 3A, member 1	HIN-1/LULEU2
96	Mm.235137	NM_007926	Scye1	Small inducible cytokine subfamily E, member 1	EMAP2/EMAPII
97	Mm.288474	NM_009263	Spp1	Secreted phosphoprotein 1	APL-1/BNSP
98	Mm.3943	NM_009379	Thpo	Thrombopoietin	MPLLG/TPO
99	Mm.1293	NM_013693	Tnf	Tumor necrosis factor	CYTOKINE/DIF
100	Mm.15383	NM_008764	Tnfrsf11b	Tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)	OCIF/OPG
101	Mm.1062	NM_009425	Tnfrsf10	Tumor necrosis factor (ligand) superfamily, member 10	APO-2/LYL81
102	Mm.249221	NM_011613	Tnfrsf11	Tumor necrosis factor (ligand) superfamily, member 11	LY109L/ODF
103	Mm.344820	NM_011614	Tnfrsf12	Tumor necrosis factor (ligand) superfamily, member 12	APOS3L/DR3L
104	Mm.8983	NM_023517	Tnfrsf13	Tumor necrosis factor (ligand) superfamily, member 13	APRIL/TALL2
105	Mm.28835	NM_033622	Tnfrsf13b	Tumor necrosis factor (ligand) superfamily, member 13b	BAFF/BLYS
106	Mm.307668	NM_019418	Tnfrsf14	Tumor necrosis factor (ligand) superfamily, member 14	HVEF-L/HVEML
107	Mm.222809	NM_177371	Tnfrsf15	Tumor necrosis factor (ligand) superfamily, member 15	TL1/TL1A
108	Mm.276823	NM_183391	Tnfrsf18	Tumor necrosis factor (ligand) superfamily, member 18	GITRL
109	Mm.4994	NM_009452	Tnfrsf4	Tumor necrosis factor (ligand) superfamily, member 4	ATH-1/ATH1
110	Mm.4861	NM_011616	Tnfrsf5	Tumor necrosis factor (ligand) superfamily, member 5	CD154/CD40L
111	Mm.3355	NM_010177	Fasli	Fas ligand (TNF superfamily, member 6)	APT1LG/CD178
112	Mm.42228	NM_011617	Tnfrsf7	Tumor necrosis factor (ligand) superfamily, member 7	CD27L/CD27LG
113	Mm.4664	NM_009403	Tnfrsf8	Tumor necrosis factor (ligand) superfamily, member 8	CD153/CD30L
114	Mm.41171	NM_009404	Tnfrsf9	Tumor necrosis factor (ligand) superfamily, member 9	4-1BB-L/4-1BBL
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	Mm.180003	NM_024277	Rps27a	Ribosomal protein S27a	Rps27a
122	Mm.163	NM_009735	B2m	Beta-2 microglobulin	B2m
123	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	Hsp84
124	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	Hsp84
125	Mm.5246	NM_008907	Ppia	Peptidylprolyl isomerase A	CyclophilinA
126	Mm.5246	NM_008907	Ppia	Peptidylprolyl isomerase A	CyclophilinA
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