

# Oligo GEMArray<sup>®</sup> DNA Microarray: Mouse Angiogenesis

## Catalog Number

OMM-024  
EMM-024

## Format:

HybTube (Standard protocol)  
HybPlate (Higher throughput protocol)

## Description

The Oligo GEMArray<sup>®</sup> Mouse Angiogenesis Microarray profiles the expression of 113 key genes involved in modulating the biological processes of angiogenesis. This array includes the growth factors and receptors that play a role in angiogenesis. Also included are the adhesion molecules and matrix proteins involved as well as proteases and their inhibitors. Cytokines and chemokines related to angiogenesis are contained in the array along with transcription factors and other related genes. Through a simple side-by-side hybridization experiment you can determine differential gene expression between your samples.

## Functional Gene Groupings

### **Angiogenic Factors:**

Growth Factors and Receptors: Adra2b, Agpt, Bai1, Col18a1, Ctgf, Ereg, Fgf1, Fgf2, Fgf6, Fgfr3, Figf, Flt1, Fzd5, Gna13, Il18, Itgav, Jag1, Kdr, Nrp, Pgf, Prok2, Stab1, Tek, Tnfrsf12a, Tnfsf12, Vegfa, Vegfb, Vegfc.

Adhesion Molecules: Angptl3, Col18a1, Ctgf, Eng, Il18, Itgav, Nrp, Stab1, Tek, Thbs1, Tnfrsf12a.

Proteases, Inhibitors and Other Matrix Proteins: Angptl4, Anpep, Col4a3, Mmp19, Serpinf1, Tmprss6.

Transcription Factors and Other Genes: Agpt2, Epas1, Hand2, Mapk14, Pofut1, Smad5, Tbx1, Tbx4, Tnfaip2, Wasf2.

### **Other Factors Involved in Angiogenesis:**

Cytokines and Chemokines: Ccl11, Ccl2, Csf3, Cxcl1, Cxcl10, Cxcl11, Cxcl2, Cxcl5, Cxcl9, Ifna1, Ifng, Il10, Il12a, Il1b, Il6, Tnf.

Other Growth Factors and Receptors: Edg1, Egf, Ephb4, Hgf, Igf1, Itgb3, Lep, Mdk, Notch4, Nppb, Npr1, Nrp2, Pdgfa, Pdgfb, Plxdc1, Ptn, Tgfa, Tgfb1, Tgfb2, Tgfb3, Tgfb1, Tnfsf15.

Adhesion Molecules: Cdh5, Itgb3, Lama5, Nrp2, Pecam, Stab2, Thbs2.

Proteases, Inhibitors and Other Matrix Proteins: Ecgf1, F2, Mmp2, Mmp9, Plau, Plg, Timp1, Timp2, Timp3.

Transcription Factors and Other Genes: Akt1, Efna1, Efna2, Efna3, Efnb2, Hif1a, Lect1, Notch4, Nudt6, Pten, Ptgs1, Ptgs2, Sh2d2a, Sphk1, Tnnt1.

## 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°C upon receipt.

## References

1. Carmeliet P. (2000) Mechanisms of Angiogenesis and Arteriogenesis. *Nature Medicine* **6**: 389-395.
2. Kerbel K. S. (2000) Tumor Angiogenesis: Past, Present and the Near Future. *Carcinogenesis* **21**: 505-515.
3. Carmeliet P, Jain R K. (2000) Angiogenesis in Cancer and Other Diseases. *Nature* **407**: 249-257.
4. Cines DB, Pollak ES, Buck CA, Loscalzo J, Zimmerman GA, McEver RP, Pober JS, Wick TM, Konkle BA, Schwartz BS, Barnathan ES, McCrae KR, Hug BA, Schmidt AM, Stern DM. (1998) Endothelial Cells in Physiology and in the Pathophysiology of Vascular Disorders. *Blood* **91**: 3527-61.
5. Oettgen P. (2001) Transcriptional Regulation of Vascular Development. *Circ Res.* **89**: 380-8.
6. Peale FV Jr, Gerritsen ME. (2001) Gene Profiling Techniques and their Application in Angiogenesis and Vascular Development. *J Pathol.* **195**: 7-19.
7. Vikkula M, Boon LM, Mulliken JB (2001) Molecular Genetics of Vascular Malformations. *Matrix Biol* **20**: 327-35.



## Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description	Gene Name
49	Mm.874	NM_010548	Il10	Interleukin 10	CSIF/Il-10
50	Mm.103783	NM_008351	Il12a	Interleukin 12A	IL-12p35/Il-12a
51	Mm.1410	NM_008360	Il18	Interleukin 18	Igf/Il-18
52	Mm.222830	NM_008361	Il1b	Interleukin 1 beta	IL-1beta/Il-1b
53	Mm.1019	NM_031168	Il6	Interleukin 6	Il-6
54	Mm.227	NM_008402	Itgav	Integrin alpha V	2610028E01Rik
55	Mm.87150	NM_016780	Itgb3	Integrin beta 3	CD61/INGRB3
56	Mm.22398	NM_013822	Jag1	Jagged 1	Headturner/Httu
57	Mm.285	NM_010612	Kdr	Kinase insert domain protein receptor	6130401C07/Fik-1
58	Mm.4339	XM_203796	Lama5	Laminin, alpha 5	AA408760/AA408762
59	Mm.46561	NM_010701	Lect1	Leukocyte cell derived chemotaxin 1	ChM-1
60	Mm.277072	NM_008493	Lep	Leptin	ob/obese
61	Mm.311337	NM_011951	Mapk14	Mitogen activated protein kinase 14	CSBP2/Crk1
62	Mm.906	NM_010784	Mdk	Midkine	MK/Mek
63	Mm.131266	NM_021412	Mmp19	Matrix metalloproteinase 19	MMP19
64	Mm.29564	NM_008610	Mmp2	Matrix metalloproteinase 2	Cig4a/GelA
65	Mm.4406	NM_013599	Mmp9	Matrix metalloproteinase 9	AW743869/B
66	Mm.173813	NM_010929	Notch4	Notch gene homolog 4 (Drosophila)	Int-3/Int3
67	Mm.2740	NM_008726	Nppb	Natriuretic peptide precursor type B	AA408272/BNP
68	Mm.4627	NM_008727	Npr1	Natriuretic peptide receptor 1	A1893888/GC-A
69	Mm.271745	NM_008737	Nrp1	Neuropilin 1	C53002903/NP-1
70	Mm.266341	NM_010939	Nrp2	Neuropilin 2	1110048P06Rik/NP-2
71	Mm.374871	NM_153561	Nudt6	Nudix (nucleoside diphosphate linked moiety X)-type motif 6	Asfzf2b
72	Mm.2675	NM_008808	Pdgfa	Platelet derived growth factor, alpha	PDGFA
73	Mm.144089	NM_011057	Pdgfb	Platelet derived growth factor, B polypeptide	PDGF-B/Sis
74	Mm.343951	NM_008816	Pecam1	Platelet/endothelial cell adhesion molecule 1	Cd31/PECAM-1
75	Mm.4809	NM_008827	Pgf	Placental growth factor	AI854365/Pigf
76	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase	u-PA/uPA
77	Mm.971	NM_008877	Plg	Plasminogen	AI649309/Pg
78	Mm.39617	NM_028199	Plexdc1	Plexin domain containing 1	AI848450
79	Mm.293761	NM_080463	Pofut1	Protein O-fucosyltransferase 1	O-FucT-1/mKIAA0180
80	Mm.87365	NM_015768	Prok2	Prokinectin 2	Bv8/PK2
81	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog	A130070J02Rik
82	Mm.275434	NM_008969	Plgs1	Prostaglandin-endoperoxide synthase 1	COX1/Cox-1
83	Mm.292547	NM_011198	Plgs2	Prostaglandin-endoperoxide synthase 2	COX2/Cox-2
84	Mm.279690	NM_008973	Ptn	Pleiotrophin	HARP/HB-GAM
85	Mm.2044	NM_011340	Serpinf1	Serine (or cysteine) peptidase inhibitor, clade F, member 1	AI195227/EPC-1
86	Mm.86361	NM_021309	Sh2d2a	SH2 domain protein 2A	Lad/Ribp
87	Mm.272920	NM_008541	Smad5	MAD homolog 5 (Drosophila)	AI451355
88	Mm.20944	NM_025367	Sphk1	Sphingosine kinase 1	1110006G24Rik/SK1
89	Mm.220821	NM_138672	Stab1	Stabilin 1	FEEL-1/MS-1
90	Mm.279611	NM_138673	Stab2	Stabilin 2	FEEL-2/FELL
91	Mm.295194	NM_011532	Tbx1	T-box 1	TBX1
92	Mm.275336	NM_011536	Tbx4	T-box 4	3930401C23
93	Mm.14313	NM_013690	Tek	Endothelial-specific receptor tyrosine kinase	Cd202b/Hyk
94	Mm.137222	NM_031199	Tgfa	Transforming growth factor alpha	wa-1/wa1
95	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1	TGF-beta1/Tgfb
96	Mm.18213	NM_009367	Tgfb2	Transforming growth factor, beta 2	BB105277/Tgf-beta2
97	Mm.3992	NM_009368	Tgfb3	Transforming growth factor, beta 3	Tgfb-3
98	Mm.197552	NM_009370	Tgfbri	Transforming growth factor, beta receptor I	ALK5/AU017191
99	Mm.4159	NM_011580	Thbs1	Thrombospondin 1	TSP-1/TSP1
100	Mm.26688	NM_011581	Thbs2	Thrombospondin 2	TSP2/Thbs-2
101	Mm.8245	NM_011593	Timp1	Tissue inhibitor of metalloproteinase 1	Cig/TIMP-1
102	Mm.206505	NM_011594	Timp2	Tissue inhibitor of metalloproteinase 2	D11Bwg1104e/Timp-2
103	Mm.4871	NM_011595	Timp3	Tissue inhibitor of metalloproteinase 3	Timp-3
104	Mm.34056	NM_027902	Trmprss6	Transmembrane serine protease 6	1300008A22Rik
105	Mm.1293	NM_013693	Tnf	Tumor necrosis factor	DIF/TNF-alpha
106	Mm.255332	NM_009396	Tnfaip2	Tumor necrosis factor, alpha-induced protein 2	Tnfp2/Tnfbp4
107	Mm.28518	NM_013749	Tnfrsf12a	Tumor necrosis factor receptor superfamily, member 12a	AI255180/C87282
108	Mm.344820	NM_011614	Tnfrsf12	Tumor necrosis factor (ligand) superfamily, member 12	AP03L/DR3L
109	Mm.208152	NM_177371	Tnfrsf15	Tumor necrosis factor (ligand) superfamily, member 15	TL1/TL1A
110	Mm.258670	NM_172894	Saps1	SAPS domain family, member 1	AI836219
111	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A	VEGF-A/VEGF120
112	Mm.15607	NM_011697	Vegfb	Vascular endothelial growth factor B	VEGF-B/Vrf
113	Mm.1402	NM_009506	Vegfc	Vascular endothelial growth factor C	AW228853/VEGF-C
114	Mm.23566	NM_153423	Wasf2	WAS protein family, member 2	AW742646/D4Ert13e
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	0610006J14Rik
122	Mm.163	NM_009735	B2m	Beta-2 microglobulin	Ly-m 11/beta-2m
123	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	90kDa/AL022974
124	Mm.2180	NM_008302	Hspcb	Heat shock protein 1, beta	90kDa/AL022974
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