

Oligo GEMArray[®] DNA Microarray: Human Cancer PathwayFinder[™]

Catalog Number

OHS-033
EHS-033

Format:

HybTube (Standard protocol)
HybPlate (Higher throughput protocol)

Description

The Oligo GEMArray[®] Human Cancer PathwayFinder[™] Microarray profiles the expression of 113 genes representative of the six biological pathways involved in transformation and tumorigenesis listed below. Through a simple side-by-side hybridization experiment you can simultaneously determine which of the 6 pathways is involved in your experimental treatment. Once you have identified the pathways involved in your treatment with this microarray, you can then perform focused profiling experiments using our pathway-specific GEMArray Microarrays. Through a simple side-by-side hybridization experiment you can determine differential gene expression between your samples.

Functional Gene Groupings

Cell Cycle Control & DNA Damage Repair: ATM, BRCA1, BRCA2, CCND1 (cyclin D1), CCNE1 (cyclin E1), CDC25A, CDK2, CDK4, CDKN1A (p21Waf1), CDKN1B (p27Kip1), CDKN2A (p16Ink4), CHEK2 (chk2 / Rad53), E2F1, MDM2, PRKDC (DNA-PK), PTEN, S100A4, RB1, TP53 (p53).

Apoptosis and Cell Senescence: APAF1, BAD, BAX, BCL2, BCL2L1 (bcl-X), BIRC5 (Survivin), CASP8, CASP9, CFLAR (CASPER), GZMA, HTATIP2, TERT (telomerase), TNFRSF1A (TNF- α receptor), TNFRSF6 (Fas), TNFRSF10B (DR5), TNFRSF25 (DR3).

Signal Transduction Molecules and Transcription Factors: AKT1, CTNNB1 (β -catenin), ERBB2, ETS2, FOS, JUN, MAPK14 (p38 MAPK), MAP2K1 (MEK), MYC, NFKB1 (NF κ B), NFKBIA (I κ B α), PIK3CB (PI3K p110 β), PIK3R1 (PI3K p85 α), RAF1, RASA1, SNCG, SRC.

Adhesion: CD44, CDH1 (E-cadherin), ICAM1, ITGA1 (integrin α 1), ITGA2 (integrin α 2), ITGA3 (integrin α 3), ITGA4 (integrin α 4), ITGA5 (integrin α 5), ITGA6 (integrin α 6), ITGAV (integrin α V), ITGB1 (integrin β 1), ITGB3 (integrin β 3), ITGB5 (integrin β 5), MCAM, MICA (MUC18), MTSS1, NCAM1, PNN, SYK, UCC1.

Angiogenesis: ANGPT1 (angiopoietin-1), ANGPT2 (angiopoietin-2), BAI1, COL18A1 (endostatin), EGF, EGFR, FGF2 (bFGF), FGFR2, FLT1 (VEGFR), HGF, IFNA1 (IFN α), IFNB1 (IFN β), IGF1, IL8, PDGFA, PDGFB, TEK (tie-2), TGFB1, TGFB1 (ALK-5), THBS1 (thrombospondin-1), THBS2 (thrombospondin-2), TNF, VEGF.

Invasion and metastasis: KISS1, KAI1, MET, MMP1 (collagenase-1), MMP2 (gelatinase A), MMP9 (gelatinase B), MTA1, MTA2, NME1, NME4 (Nm23), PLAU, PLAU, S100A4, SERPINB2 (PAI2), SERPINB5 (maspin), SERPINE1 (PAI1), TIMP1, TIMP3, TWIST1.

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. Hanahan, D. and Weinberg, R.A. (2000) The Hallmarks Of Cancer. *Cell* **100**: 57-70.
2. Tsatsanis, C. and Spandidos, D.A. (2000) The Role Of Oncogenic Kinases In Human Cancer. *Int J Mol Med* **5**: 583-590.
3. Meyer, T. and Hart, I.R. (1998) Mechanisms Of Tumour Metastasis. *Eur J Cancer* **34**: 214-221.
4. Detmar, M. (2000) Tumor Angiogenesis. *JID Symposium Proceedings* **5**: 20-23.
5. Klingelutz, A.J. (1999) The Roles Of Telomeres And Telomerase In Cellular Immortalization And The Development Of Cancer. *Anticancer Res* **19**: 4823-4830.
6. Kaufmann, S.H. and Gores, G.J. (2000) Apoptosis In Cancer: Cause And Cure. *BioEssays* **22**: 1007-1017.
7. Lowe, S.W. and Lin, A.W. (2000) Apoptosis In Cancer. *Carcinogenesis* **21**: 485-495.
8. Funk, J.O. (1999) Cancer Cell Cycle Control. *Anticancer Res* **19**: 4772-4780.
9. Molinari, M. (2000) Cell Cycle Checkpoints And Their Inactivation In Human Cancer. *Cell Prolif* **33**: 261-274.
10. Clezardin, P. (1998) Recent Insights Into The Role Of Integrins In Cancer Metastasis. *Cell Mol Life Sci* **54**: 541-548.

Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description	Gene Name
44	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1	IFL/IFN
45	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast	IFB/IFF
46	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)	IGF1
47	Hs.624	NM_000584	IL8	Interleukin 8	3-10C/AMCF-1
48	Hs.519304	NM_181501	ITGA1	Integrin, alpha 1	CD49a
49	Hs.482077	NM_002203	ITGA2	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)	BR/CD49B
50	Hs.265829	NM_002204	ITGA3	Integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)	CD49C/GAP-B3
51	Hs.553495	NM_000885	ITGA4	Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)	IA4/CD49D
52	Hs.505654	NM_002205	ITGA5	Integrin, alpha 5 (fibronectin receptor, alpha polypeptide)	CD49E/FNRA
53	Hs.133397	NM_000210	ITGA6	Integrin, alpha 6	CD49F
54	Hs.436873	NM_002210	ITGAV	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)	CD51/MSK8
55	Hs.429052	NM_002211	ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)	CD29/FNRB
56	Hs.218040	NM_000212	ITGB3	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	CD61/GP3A
57	Hs.13155	NM_002213	ITGB5	Integrin, beta 5	Integrin b5
58	Hs.525704	NM_002228	JUN	V-jun sarcoma virus 17 oncogene homolog (avian)	AP1
59	Hs.527778	NM_002231	KAI1	Kangai 1 (suppression of tumorigenicity 6, prostate; CD82 antigen (R2 leukocyte antigen, antigen detected by monoclonal and antibody IA4))	4F9/C33
60	Hs.95008	NM_002256	KISS1	KISS-1 metastasis-suppressor	KISS-1
61	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1	MAPKK1/MEK1
62	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14	CSBP1/CSBP2
63	Hs.511397	NM_006500	MCAM	Melanoma cell adhesion molecule	CD146/MUC18
64	Hs.369849	NM_002392	MDM2	Mdm2, transformed 3T3 cell double minute 2, p53 binding protein (mouse)	HDM2
65	Hs.132966	NM_000245	MET	Met proto-oncogene (hepatocyte growth factor receptor)	HGFR/RCCP2
66	Hs.549053	NM_000247	MICA	MHC class I polypeptide-related sequence A	TRUNCATED
67	Hs.83169	NM_002421	MMP1	Matrix metalloproteinase 1 (interstitial collagenase)	CLG/CLGN
68	Hs.513617	NM_004530	MMP2	Matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)	CLG4/CLG4A
69	Hs.297413	NM_004994	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)	GELB/CLG4B
70	Hs.525629	NM_004689	MTA1	Metastasis associated 1	Mta-1
71	Hs.173043	NM_004739	MTA2	Metastasis associated 1 family, member 2	MEMBER 2/MTA1L1
72	Hs.336994	NM_014751	MTSS1	Metastasis suppressor 1	MIM/MIMA
73	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)	C-MYC
74	Hs.503878	NM_000615	NCAM1	Neural cell adhesion molecule 1	CD56/MSK39
75	Hs.431926	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105)	EBF-1/KBF1
76	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	IKBAM/AD-3
77	Hs.118638	NM_000269	NME1	Non-metastatic cells 1, protein (NM23A) expressed in	AWD/GAAD
78	Hs.9235	NM_005009	NME4	Non-metastatic cells 4, protein expressed in	NM23-H4/NM23H4
79	Hs.376032	NM_002607	PDGFA	Platelet-derived growth factor alpha polypeptide	PDGF-A/PDGF1
80	Hs.1976	NM_002608	PDGFB	Platelet-derived growth factor beta polypeptide (simian sarcoma viral (v-sis) oncogene homolog)	C-SIS/PDGF2
81	Hs.239818	NM_006219	PIK3CB	Phosphoinositide-3-kinase, catalytic, beta polypeptide	P110-BETA/PI3K
82	Hs.132225	NM_181504	PIK3R1	Phosphoinositide-3-kinase, regulatory subunit, polypeptide 1 (p85 alpha)	GRB1/P85-ALPHA
83	Hs.77274	NM_002658	PLAU	Plasminogen activator, urokinase	ATF/U-PA
84	Hs.466871	NM_002659	PLAUR	Plasminogen activator, urokinase receptor	CD87/UPAR
85	Hs.409965	NM_002687	PNN	Pirin, desmosome associated protein	DRS/PININ
86	Hs.491682	NM_006904	PRKDC	Protein kinase, DNA-activated, catalytic polypeptide	DNAPK/DNPK1
87	Hs.500466	NM_000314	PTEN	Phosphatase and tensin homolog (mutated in multiple advanced cancers 1)	BZS/MHAM
88	Hs.159130	NM_002880	RAF1	V-raf-1 murine leukemia viral oncogene homolog 1	C-RAF/CRAF
89	Hs.553501	NM_002890	RASA1	RAS p21 protein activator (GTPase activating protein) 1	GAP/PKWS
90	Hs.408528	NM_000321	RB1	Retinoblastoma 1 (including osteosarcoma)	OSRC/RB
91	Hs.81256	NM_002961	S100A4	S100 calcium binding protein A4 (calcium protein, calvasculin, metastasin, murine placental homolog)	18A2/42A
92	Hs.514913	NM_002575	SERPINE2	Serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2	HST1201/PAI
93	Hs.55279	NM_002639	SERPINE5	Serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5	MASPIN/PI5
94	Hs.414795	NM_000602	SERPINE1	Serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor)	PAI/PAI-1
95	Hs.349470	NM_003087	SNCG	Synuclein, gamma (breast cancer-specific protein 1)	BCSG1/SR
96	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)	MSV/C-SRC
97	Hs.371720	NM_003177	SYK	Spleen tyrosine kinase	Syk
98	Hs.89640	NM_000459	TEK	TEK tyrosine kinase, endothelial (venous malformations, multiple cutaneous and mucosal)	CD202B/TIE-2
99	Hs.492203	NM_003219	TERT	Telomerase reverse transcriptase	EST2/HEST2
100	Hs.1103	NM_000660	TGFB1	Transforming growth factor, beta 1 (Camurati-Engelmann disease)	BETA 1/CED
101	Hs.494622	NM_004612	TGFBRI1	Transforming growth factor, beta receptor 1 (activin A receptor type II-like kinase, 53kDa)	ACVRLK4/ALK-5
102	Hs.164226	NM_003246	THBS1	Thrombospondin 1	THBS/TSP
103	Hs.371147	NM_003247	THBS2	Thrombospondin 2	TSP2
104	Hs.522632	NM_003254	TIMP1	Tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase)	CLG/EPA
105	Hs.297324	NM_000362	TIMP3	Tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)	HSMRK222/K222TA2
106	Hs.241570	NM_000594	TNF	Tumor necrosis factor (TNF superfamily, member 2)	DIF/TNF-ALPHA
107	Hs.521456	NM_003842	TNFRSF10B	Tumor necrosis factor receptor superfamily, member 10b	DR5/KILLER
108	Hs.279584	NM_001065	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A	CD120a/PPF
109	Hs.462529	NM_003790	TNFRSF25	Tumor necrosis factor receptor superfamily, member 25	APO-3/DDR3
110	Hs.244139	NM_152877	FAS	Fas (TNF receptor superfamily, member 6)	ALPS1A/APO-1
111	Hs.408312	NM_000546	TP53	Tumor protein p53 (Li-Fraumeni syndrome)	CYS51STOP/P53
112	Hs.66744	NM_000474	Twist1	Twist homolog 1 (acrocephalosyndactyly 3; Saethre-Chotzen syndrome) (Drosophila)	ACS3/BPES2
113	Hs.416007	NM_017549	UCC1	Upregulated in colorectal cancer gene 1	EPDR1/MERP-1
114	Hs.73793	NM_003376	VEGF	Vascular endothelial growth factor	VEGFA
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	BETA/D6S182
124	Hs.509736	NM_007355	HSPCB	Heat shock 90kDa protein 1, beta	BETA/D6S182
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