

RT² Profiler™ PCR Array: Rat Cancer PathwayFinder™

Catalog Number

PARN-033A

PARN-033C

PARN-033D

PARN-033E

PARN-033F

PARN-033G

For Real-Time Instruments:

ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4; and Stratagene Mx3005p, Mx3000p

ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus

Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000

ABI 7900HT 384-Well Block

Roche LightCycler 480 96-well Block

Roche LightCycler 480 384-well Block

Description

The Rat Cancer PathwayFinder™ RT² Profiler PCR Array profiles the expression of 84 genes representative of the six biological pathways involved in transformation and tumorigenesis listed below. You can use this array to determine which of the six pathways is involved in your experimental treatment with this array. Then you can then follow up on your Cancer PathwayFinder™ experiment with profiling experiments focusing on the individual pathways involved with one of our other pathway-specific PCR Arrays. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to oncogenesis with this array.

Functional Gene Groupings

Cell Cycle Control and DNA Damage Repair: Atm, Brca1, Ccnd1, Ccne1, Cdc25a, Cdk2, Cdk4, Cdkn1a (p21Waf1), Cdkn2a (p16Ink4), Chek2 (Rad53), E2f1, Mdm2, Pten, Rb1, Tp53.

Apoptosis and Cell Senescence: Apaf1, Bad, Bax, Bcl2, Bcl2l1 (bcl-X), Birc5 (survivin), Casp8, Cflar, Tert (telomerase), Tnfrsf10b (DR5), Tnfrsf1a, Tnfrsf6.

Signal Transduction Molecules and Transcription Factors: Akt1, Ctnnb1 (Catnb), Ets2, Fos, Grb2, Jun, Map2k1 (MEK), Myc, Nfkb1, Nfkbia (IkBa), Pik3r1, Raf1.

Adhesion: Cdh1, Icam1, Itga2, Itga3, Itga4, Itgav, Itgb1, Itgb3, Mcam, Ncam1.

Angiogenesis: Angpt1, Col18a1 (endostatin), Egfr, Fgf1, Fgfr2, Figf, Hgf, Ifna1, Ifnb1, Igf1, Pdgfa, Pdgfb, Tek, Tgfb1, Tgfb1 (ALK-5), Thbs1, Tnf, Vegfa, Vegfb, Vegfc.

Invasion and Metastasis: Kiss1, Met, Mmp2, Mmp9, Mta1, Mta2, Muc1, Nme1, Plau (uPA), Plaur (uPAR), S100a4, Serpinb2, Serpine1 (PAI1), Timp1, Twist1.

Storage Conditions

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

Storage Conditions: PCR Arrays are shipped at ambient temperature. Keep plates at -20 °C for long-term storage.

NOTE: Be sure that you have the correct PCR Array format for your instrument before starting the experiment.

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. Klingelhutz, 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

Array Layout: Rat Cancer PathwayFinder™ PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	Akt1	Angpt1	Apaf1	Atm	Bad	Bax	Bcl2	Bcl2l1	Birc5	Brca1	Casp8	Ccnd1
B	Ccne1	Cdc25a	Cdh1	Cdk2	Cdk4	Cdkn1a	Cdkn2a	Cflar	Chek2	Col18a1	Ctnnb1	E2f1
C	Egfr	Ets2	Fgf1	Fgfr2	Figf	Fos	Grb2	Hgf	Icam1	Ifna1	Ifnb1	Igf1
D	Itga2	Itga3	Itga4	Itgav	Itgb1	Itgb3	Jun	Kiss1	Map2k1	Mcam	Mdm2	Met
E	Mmp2	Mmp9	Mta1	Mta2	Muc1	Myc	Ncam1	Nfkb1	Nfkbia	Nme1	Pdgfa	Pdgfb
F	Pik3r1	Plau	Plaur	Pten	Raf1	Rb1	S100a4	Serpib2	Serpine1	Tek	Tert	Tgfb1
G	Tgfb1	Thbs1	Timp1	Tnf	Tnfrsf10b	Tnfrsf1a	Tnfrsf6	Tp53	Twist1	Vegfa	Vegfb	Vegfc
H	Rplp1	Hprt	Rpl13a	Ldha	Actb	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Rn.11422	NM_033230	Akt1	Thymoma viral proto-oncogene 1
A02	Rn.161953	NM_053546	Angpt1	Angiopoietin 1
A03	Rn.64522	NM_023979	Apaf1	Apoptotic peptidase activating factor 1
A04	Rn.98962	XM_236275	Atm	Ataxia telangiectasia mutated homolog (human) (mapped)
A05	Rn.36696	NM_022698	Bad	Bcl2-associated death promoter
A06	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A07	Rn.9996	NM_016993	Bcl2	B-cell leukemia/lymphoma 2
A08	Rn.10323	NM_031535	Bcl2l1	Bcl2-like 1
A09	Rn.54471	NM_022274	Birc5	Baculoviral IAP repeat-containing 5
A10	Rn.48840	NM_012514	Brca1	Breast cancer 1
A11	Rn.54474	NM_022277	Casp8	Caspase 8
A12	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B01	Rn.15455	XM_574426	Ccne1	Cyclin E
B02	Rn.11390	NM_133571	Cdc25a	Cell division cycle 25 homolog A (S. cerevisiae)
B03	Rn.1303	NM_031334	Cdh1	Cadherin 1
B04	Rn.104460	NM_199501	Cdk2	Cyclin dependent kinase 2
B05	Rn.6115	NM_053593	Cdk4	Cyclin-dependent kinase 4
B06	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B07	Rn.48717	NM_031550	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B08	Rn.55946	NM_057138	Cflar	CASP8 and FADD-like apoptosis regulator
B09	Rn.163213	NM_053677	Chek2	CHK2 checkpoint homolog (S. pombe)
B10	Rn.12030	XM_241632	Col18a1	Procollagen, type XVIII, alpha 1
B11	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B12	Rn.72471	XM_230765	E2f1	E2F transcription factor 1
C01	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
C02	Rn.164554	XM_239510	Ets2	V-ets erythroblastosis virus E26 oncogene homolog 2 (avian) (mapped)
C03	Rn.88013	NM_012846	Fgf1	Fibroblast growth factor 1
C04	Rn.12732	XM_341940	Fgfr2	Fibroblast growth factor receptor 2
C05	Rn.10796	NM_031761	Figf	C-fos induced growth factor
C06	Rn.103750	NM_022197	Fos	FBJ murine osteosarcoma viral oncogene homolog
C07	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
C08	Rn.10468	NM_017017	Hgf	Hepatocyte growth factor
C09	Rn.12	NM_012967	Icam1	Intercellular adhesion molecule 1
C10	Rn.196548	NM_001014786	Ifna1	Interferon-alpha 1
C11	Rn.138105	NM_019127	Ifnb1	Interferon beta 1, fibroblast
C12	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D01	Rn.83597	XM_345156	Itga2	Integrin, alpha 2
D02	Rn.154664	XM_340884	Itga3_predicted	Integrin alpha 3 (predicted)
D03	Rn.12704	XM_230033	Itga4	Integrin alpha 4 (mapped)

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Position	UniGene	GenBank	Symbol	Description
D04	Rn.23339	XM_230950	Itgav_predicted	Integrin alpha V (predicted)
D05	Rn.25733	NM_017022	Itgb1	Integrin beta 1 (fibronectin receptor beta)
D06	Rn.162202	NM_153720	Itgb3	Integrin beta 3
D07	Rn.93714	NM_021835	Jun	Jun oncogene
D08	Rn.66008	NM_181692	Kiss1	KiSS-1 metastasis-suppressor
D09	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
D10	Rn.2694	NM_023983	Mcam	Melanoma cell adhesion molecule
D11	Rn.91829	XM_235169	Mdm2	Transformed mouse 3T3 cell double minute 2
D12	Rn.10617	NM_031517	Met	Met proto-oncogene
E01	Rn.6422	NM_031054	Mmp2	Matrix metalloproteinase 2
E02	Rn.10209	NM_031055	Mmp9	Matrix metalloproteinase 9
E03	Rn.5840	NM_022588	Mta1	Metastasis associated 1
E04	Rn.137719	XM_342015	Mta2	Metastasis-associated gene family, member 2
E05	Rn.64144	XM_342281	Muc1	Mucin 1, transmembrane
E06	Rn.12072	NM_012603	Myc	Myelocytomatosis viral oncogene homolog (avian)
E07	Rn.11283	NM_031521	Ncam1	Neural cell adhesion molecule 1
E08	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light chain gene enhancer in B-cells 1, p105
E09	Rn.12550	XM_343065	Nfkbia	Nuclear factor of kappa light chain gene enhancer in B-cells inhibitor, alpha
E10	Rn.6236	NM_138548	Nme1	Expressed in non-metastatic cells 1
E11	Rn.10999	NM_012801	Pdgfa	Platelet derived growth factor, alpha
E12	Rn.198230	XM_343293	Pdgfb	Platelet derived growth factor, B polypeptide
F01	Rn.10599	NM_013005	Pik3r1	Phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1
F02	Rn.6064	NM_013085	Plau	Plasminogen activator, urokinase
F03	Rn.82711	NM_017350	Plaur	Plasminogen activator, urokinase receptor
F04	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
F05	Rn.33262	NM_012639	Raf1	V-raf-1 murine leukemia viral oncogene homolog 1
F06	Rn.55115	XM_344434	Rb1	Retinoblastoma 1
F07	Rn.504	NM_012618	S100a4	S100 calcium-binding protein A4
F08	Rn.42912	NM_021696	Serpinh2	Serine (or cysteine) proteinase inhibitor, clade B, member 2
F09	Rn.29367	NM_012620	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F10	Rn.9159	XM_342863	Tek	Endothelial-specific receptor tyrosine kinase
F11	Rn.48802	NM_053423	Tert	Telomerase reverse transcriptase
F12	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G01	Rn.44402	NM_012775	Tgfb1	Transforming growth factor, beta receptor 1
G02	Rn.185771	NM_001013062	Thbs1	Thrombospondin 1
G03	Rn.25754	NM_053819	Timp1	Tissue inhibitor of metalloproteinase 1
G04	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G05	Rn.105558	XM_344431	Tnfrsf10b_predicted	Tumor necrosis factor receptor superfamily, member 10b (predicted)
G06	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G07	Rn.162521	NM_139194	Tnfrsf6	Tumor necrosis factor receptor superfamily, member 6
G08	Rn.54443	NM_030989	Tp53	Tumor protein p53
G09	Rn.161904	NM_053530	Twist1	Twist gene homolog 1 (Drosophila)
G10	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G11	Rn.198550	NM_053549	Vegfb	Vascular endothelial growth factor B
G12	Rn.6913	NM_053653	Vegfc	Vascular endothelial growth factor C
H01	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H02	Rn.47	NM_012583	Hprt	Hypoxanthine guanine phosphoribosyl transferase
H03	Rn.92211	NM_173340	Rpl13a	Ribosomal protein L13A
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.94978	NM_031144	Actb	Actin, beta
H06	N/A	U26919	RGDC	Rat Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control