

# RT<sup>2</sup> Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Rat Notch Signaling Targets

Cat. no. 330231 PARN-259ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format A	Applied Biosystems <sup>®</sup> models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad <sup>®</sup> models iCycler <sup>®</sup> , iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf <sup>®</sup> Mastercycler <sup>®</sup> ep realplex models 2, 2s, 4, 4s; Stratagene <sup>®</sup> models Mx3005P <sup>®</sup> , Mx3000P <sup>®</sup> ; Takara TP-800
RT <sup>2</sup> Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT <sup>2</sup> Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon <sup>®</sup> , DNA Engine Opticon 2; Stratagene Mx4000 <sup>®</sup>
RT <sup>2</sup> Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT <sup>2</sup> Profiler PCR Array, Format F	Roche <sup>®</sup> LightCycler <sup>®</sup> 480 (96-well block)
RT <sup>2</sup> Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT <sup>2</sup> Profiler PCR Array, Format H	Fluidigm <sup>®</sup> BioMark™



Sample & Assay Technologies

## Description

The Rat Notch Signaling Targets RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes regulated by the Notch pathway. Notch signaling is a conserved developmental pathway involved in cell-cell communication, cell fate, apoptosis, and development. The pathway was originally discovered in *Drosophila melanogaster*, and mammalian homologs were identified later. Ligands from the Delta and Jagged/Serrate families activate the Notch membrane-bound receptors, inducing cleavage of the Notch intracellular domain. This intracellular domain interacts with the RBPJ family of transcription factors as well as a variety of coactivators and corepressors to initiate target gene transcription. The output of Notch signaling activation depends on the cellular context, and the proper timing and spatial regulation of its activation is crucial for normal embryonic developmental processes. Dysregulation of Notch signaling processes can lead to cancer as well as genetic developmental disorders. Many Notch pathway target genes have been identified using experimental techniques such as chromatin immunoprecipitation (ChIP) and gene expression studies. This array includes Notch signaling pathway transcription factors and highly relevant target genes identified by multiple studies. Results obtained with this array can be used to analyze activation or inhibition of Notch signaling. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes regulated by Notch signaling with this array.

For further details, consult the *RT<sup>2</sup> Profiler PCR Array Handbook*.

## Shipping and storage

RT<sup>2</sup> Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT<sup>2</sup> Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at  $-20^{\circ}\text{C}$ .

**Note:** Ensure that you have the correct RT<sup>2</sup> Profiler PCR Array format for your real-time cycler (see table above).

**Note:** Open the package and store the products appropriately immediately on receipt.

---

## Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT<sup>2</sup> Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	Abl1	Adams1	Bdnf	Cbfa2i3	Ccnd1	Ccnd2	Clock	Crebbp	Cx3cl1	Cxcl1	Cxcl12	Cyp26a1
<b>B</b>	Ddr1	Dkk1	Edn1	Efna1	Efnb1	Egr3	Fabp7	Fgf5	Fjx1	Fh1	Foxd3	Frzb
<b>C</b>	Fzd5	Gadd45b	Gpsm2	Hbegf	Hes1	Hes5	Hes7	Hey1	Hey2	Heyl	Hspb8	Id1
<b>D</b>	Id2	Id3	Id4	Igf1bp3	Il2ra	Il33	Jag1	Jun	Kalrn	Kilfg	Krt14	Lfng
<b>E</b>	Maf	Mark1	Mtss1	Myf5	Nampt	Nes	Nodal	Notch1	Notch3	Pax6	Pbx1	Pcdh8
<b>F</b>	Pdgfra	Pdgfra	Pdgfra	Ptcr	Ptgs2	Rbpjl	Rbpsuh	Rhov	Rnd1	Runx1	Runx2	S1pr3
<b>G</b>	Serpine1	Sgpl1	Snai1	Socs3	Sox9	Tec	Tnc	Vegfa	Wisp1	Wnt4	Wnt5a	Wnt6
<b>H</b>	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

## Gene table: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.7897	NM_024400	Adams1	ADAM metalloproteinase with thrombospondin type 1 motif, 1
A03	Rn.11266	NM_012513	Bdnf	Brain-derived neurotrophic factor
A04	Rn.128745	NM_001108453	Cbfa2i3	Core-binding factor, runt domain, alpha subunit 2; translocated to, 3
A05	Rn.22279	NM_171992	Ccnd1	Cyclin D1
A06	Rn.96083	NM_022267	Ccnd2	Cyclin D2
A07	Rn.205839	NM_021856	Clock	Clock homolog (mouse)
A08	Rn.108128	NM_133381	Crebbp	CREB binding protein
A09	Rn.107266	NM_134455	Cx3cl1	Chemokine (C-X3-C motif) ligand 1
A10	Rn.10907	NM_030845	Cxcl1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
A11	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
A12	Rn.81072	NM_130408	Cyp26a1	Cytochrome P450, family 26, subfamily A, polypeptide 1
B01	Rn.7807	NM_013137	Ddr1	Discoidin domain receptor tyrosine kinase 1
B02	Rn.214343	NM_001106350	Dkk1	Dickkopf homolog 1 (Xenopus laevis)
B03	Rn.10918	NM_012548	Edn1	Endothelin 1
B04	Rn.8427	NM_053599	Efna1	Ephrin A1
B05	Rn.44398	NM_017089	Efnb1	Ephrin B1
B06	Rn.44371	NM_017086	Egr3	Early growth response 3
B07	Rn.10014	NM_030832	Fabp7	Fatty acid binding protein 7, brain
B08	Rn.44445	NM_022211	Fgf5	Fibroblast growth factor 5
B09	Rn.93503	NM_001108955	Fjx1	Four jointed box 1 (Drosophila)
B10	Rn.10239	NM_019306	Fh1	Fms-related tyrosine kinase 1
B11	Rn.92964	XM_575873	Foxd3	Forkhead box D3
B12	Rn.12034	NM_001100527	Frzb	Frizzled-related protein
C01	Rn.24792	NM_173838	Fzd5	Frizzled homolog 5 (Drosophila)
C02	Rn.35886	NM_001008321	Gadd45b	Growth arrest and DNA-damage-inducible, beta
C03	Rn.144235	XM_575015	Gpsm2	G-protein signaling modulator 2 (AGS3-like, C. elegans)
C04	Rn.10148	NM_012945	Hbegf	Heparin-binding EGF-like growth factor
C05	Rn.19727	NM_024360	Hes1	Hairy and enhancer of split 1 (Drosophila)
C06	Rn.22422	NM_024383	Hes5	Hairy and enhancer of split 5 (Drosophila)
C07	Rn.218470	NM_001105792	Hes7	Hairy and enhancer of split 7 (Drosophila)
C08	Rn.98202	XM_342216	Hey1	Hairy/enhancer-of-split related with YRPW motif 1
C09	Rn.58672	NM_130417	Hey2	Hairy/enhancer-of-split related with YRPW motif 2
C10	Rn.22252	NM_001107977	Heyl	Hairy/enhancer-of-split related with YRPW motif-like
C11	Rn.102906	NM_053612	Hspb8	Heat shock protein B8
C12	Rn.2113	NM_012797	Id1	Inhibitor of DNA binding 1
D01	Rn.3272	NM_013060	Id2	Inhibitor of DNA binding 2
D02	Rn.2760	NM_013058	Id3	Inhibitor of DNA binding 3
D03	Rn.22987	NM_175582	Id4	Inhibitor of DNA binding 4
D04	Rn.26369	NM_012588	Igf1bp3	Insulin-like growth factor binding protein 3
D05	Rn.9872	NM_013163	Il2ra	Interleukin 2 receptor, alpha
D06	Rn.106849	NM_001014166	Il33	Interleukin 33
D07	Rn.88804	NM_019147	Jag1	Jagged 1
D08	Rn.93714	NM_021835	Jun	Jun oncogene
D09	Rn.87882	NM_032062	Kalrn	Kalirin, RhoGEF kinase

Position	UniGene	GenBank	Symbol	Description
D10	Rn.44216	NM_021843	Kitlg	KIT ligand
D11	Rn.153972	NM_001008751	Krt14	Keratin 14
D12	Rn.127809	NM_133393	Lfng	LFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase
E01	Rn.10726	NM_019318	Maf	V-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
E02	Rn.21430	NM_053947	Mark1	MAP/microtubule affinity-regulating kinase 1
E03	Rn.38488	NM_001130563	Mtss1	Metastasis suppressor 1
E04	Rn.218675	NM_001106783	Myf5	Myogenic factor 5
E05	Rn.203508	NM_177928	Nampt	Nicotinamide phosphoribosyltransferase
E06	Rn.9701	NM_012987	Nes	Nestin
E07	Rn.218528	NM_001106394	Nodal	Nodal homolog (mouse)
E08	Rn.25046	NM_001105721	Notch1	Notch homolog 1, translocation-associated (Drosophila)
E09	Rn.53876	NM_020087	Notch3	Notch homolog 3 (Drosophila)
E10	Rn.89724	NM_013001	Pax6	Paired box 6
E11	Rn.205189	NM_001134862	Pbx1	Pre-B-cell leukemia homeobox 1
E12	Rn.23337	NM_022868	Pcdh8	Protocadherin 8
F01	Rn.198230	NM_031524	Pdgfb	Platelet-derived growth factor beta polypeptide (simian sarcoma viral (v-sis) oncogene homolog)
F02	Rn.55127	NM_012802	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F03	Rn.98311	NM_031525	Pdgfrb	Platelet derived growth factor receptor, beta polypeptide
F04	Rn.92370	XM_001065627	Ptcra	Pre T-cell antigen receptor alpha
F05	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
F06	Rn.219869	NM_001108604	Rbpjl	Recombination signal binding protein for immunoglobulin kappa J region-like
F07	Rn.58803	XM_232595	Rbpsuh	Recombining binding protein suppressor of hairless (Drosophila)
F08	Rn.30047	NM_138542	Rhov	Ras homolog gene family, member V
F09	Rn.198250	NM_001013222	Rnd1	Rho family GTPase 1
F10	Rn.11201	NM_017325	Runx1	Runt-related transcription factor 1
F11	Rn.214214	NM_053470	Runx2	Runt-related transcription factor 2
F12	Rn.108119	XM_225216	S1pr3	Sphingosine-1-phosphate receptor 3
G01	Rn.29367	NM_012620	Serpine1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
G02	Rn.26953	NM_173116	Sgpl1	Sphingosine-1-phosphate lyase 1
G03	Rn.8008	NM_053805	Snai1	Snail homolog 1 (Drosophila)
G04	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
G05	Rn.95086	XM_343981	Sox9	SRY-box containing gene 9
G06	Rn.11797	NM_053432	Tec	Tec protein tyrosine kinase
G07	Rn.12723	NM_053861	Tnc	Tenascin C
G08	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G09	Rn.63486	NM_031716	Wisp1	WNT1 inducible signaling pathway protein 1
G10	Rn.34782	NM_053402	Wnt4	Wingless-type MMTV integration site family, member 4
G11	Rn.48749	NM_022631	Wnt5a	Wingless-type MMTV integration site family, member 5A
G12	Rn.22149	NM_001108226	Wnt6	Wingless-type MMTV integration site family, member 6
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
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

## Related products

For optimal performance, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT <sup>2</sup> SYBR Green ROX <sup>™</sup> qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT <sup>2</sup> SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

\* Larger kit sizes available; please inquire.

RT<sup>2</sup> Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

Trademarks: QIAGEN® (QIAGEN Group); Applied Biosystems®, ViiA™, StepOnePlus™, ROX™ (Applied Biosystems Corporation or its subsidiaries); Bio-Rad®, iCycler®, iQ™, MyiQ™, Chromo4™, CFX96™, DNA Engine Opticon®, CFX384™ (Bio-Rad Laboratories, Inc.); Stratagene®, Mx3005P®, Mx3000P®, Mx4000® (Stratagene); Eppendorf®, Mastercycler® (Eppendorf AG); Roche®, LightCycler® (Roche Group); Fluidigm® BioMark™ (Fluidigm Corporation); SYBR® (Molecular Probes, Inc.).

1066029 03/2011 © 2011 QIAGEN, all rights reserved.

[www.qiagen.com](http://www.qiagen.com)

Canada ■ 800-572-9613

Ireland ■ 1800 555 049

Norway ■ 800-18859

China ■ 8621-3865-3865

Italy ■ 800-787980

Singapore ■ 1800-742-4368

Denmark ■ 80-885945

Japan ■ 03-6890-7300

Spain ■ 91-630-7050

Australia ■ 1-800-243-800

Finland ■ 0800-914416

Korea (South) ■ 080-000-7145

Sweden ■ 020-790282

Austria ■ 0800/281010

France ■ 01-60-920-930

Luxembourg ■ 8002 2076

Switzerland ■ 055-254-22-11

Belgium ■ 0800-79612

Germany ■ 02103-29-12000

Mexico ■ 01-800-7742-436

UK ■ 01293-422-911

Brazil ■ 0800-557779

Hong Kong ■ 800 933 965

The Netherlands ■ 0800 0229592

USA ■ 800-426-8157



Sample & Assay Technologies