RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Rat Protease Activated Receptor Signaling

Cat. no. 330231 PARN-159ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Rat Protease-Activated Receptor Signaling RT² Profiler PCR Array profiles the expression of 84 key genes involved in the activation and response of protease-activated receptors (PARs). The PAR family is a class of G protein-coupled receptors that are activated by proteolytic cleavage of their extracellular domain. Thrombin (F2) activates PAR1, PAR2, and PAR4, whereas trypsin activates PAR3. However, these 4 receptors can also be activated by several other proteases. Each enzyme cleaves specific sites on the receptors, resulting in different downstream responses. The majority of the proteases that activate PAR signaling play a central role in hemostasis, or the formation and degradation of blood clots. Specific PAR signaling pathways and responses have been identified for some of these proteases, such as tissue factor (F3), activated protein C (PROC), factor VIIa (F7), and factor Xa (F10). PAR signaling also cross-talks with other cellular receptors, such as EPCR (PROCR), TLR4, and S1PR3. These signaling pathways have been identified in multiple cell types, affecting biological processes such as adhesion, proliferation, and migration. PAR signaling dysregulation can be involved in cancer progression. In addition, cancer patients are often diagnosed with coagulopathies, caused by dysregulation of either PAR ligands or target genes involved in hemostasis. PAR signaling target genes also include cytokines and other proteins regulating the inflammatory response, as well as angiogenic genes. This array includes ligands and receptors involved in PAR signaling, as well as downstream effectors and target genes identified for specific PAR signaling pathways. The results of this array can suggest which PARs and specific pathways are involved in a model system of interest. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in PAR signaling with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² 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. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² 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 *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Adcy7	Akt1	Ccl12	Cd55	Cdkn1a	Csf1	Csf2	Ctgf	Ctsg	Cxcl3	Cyr61	Dkk1
B	Egr1	Elk1	Ets1	F10	F2	F2r	F2rl1	F2rl2	F2rl3	F3	F7	Gata2
C	Gja1	Gnai1	Hbegf	Hmgcr	Hras	Hspa5	Icam1	Ikbkb	Il10	Il13	Il1b	Il4
D	Il6	Itgam	Itgav	Itgb1	Junb	Kdr	Kitlg	Map2k1	Mapk14	Mif	Mmp1a	Mmp2
E	Nab2	Nfkb1	Nr4a1	Plau	Plaur	Plek	Plg	Prkca	Prkce	Proc	Procr	Ptgs2
F	Ptk2	Ptpn11	Rel	Rela	Rhoa	Rhoh	Rps6kb1	S1pr1	S1pr3	Sele	Selp	Serpinb2
G	Serpinb5	Serpine1	Src	Tfpi	Tgfb1	Thbd	Thbs1	Tnf	Tp53	Vcam1	Vegfa	Vegfc
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.161712	NM_053396	Adcy7	Adenylate cyclase 7
A02	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A03	Rn.137780	NM_001105822	Ccl12	Chemokine (C-C motif) ligand 12
A04	Rn.18841	NM_022269	Cd55	Cd55 molecule
A05	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
A06	Rn.83632	NM_023981	Csf1	Colony stimulating factor 1 (macrophage)
A07	Rn.44285	XM_340799	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
A08	Rn.17145	NM_022266	Ctgf	Connective tissue growth factor
A09	Rn.103332	NM_001106041	Ctsg	Cathepsin G
A10	Rn.10525	NM_138522	Cxcl3	Chemokine (C-X-C motif) ligand 3
A11	Rn.22129	NM_031327	Cyr61	Cysteine-rich, angiogenic inducer, 61
A12	Rn.214343	NM_001106350	Dkk1	Dickkopf homolog 1 (Xenopus laevis)
B01	Rn.9096	NM_012551	Egr1	Early growth response 1
B02	Rn.204602	XM_001055949	Elk1	ELK1, member of ETS oncogene family
B03	Rn.88756	NM_012555	Ets1	V-ets erythroblastosis virus E26 oncogene homolog 1 (avian)
B04	Rn.21393	NM_017143	F10	Coagulation factor X
B05	Rn.54498	NM_022924	F2	Coagulation factor II (thrombin)
B06	Rn.2609	NM_012950	F2r	Coagulation factor II (thrombin) receptor
B07	Rn.10543	NM_053897	F2rl1	Coagulation factor II (thrombin) receptor-like 1
B08	Rn.206020	NM_053313	F2rl2	Coagulation factor II (thrombin) receptor-like 2
B09	Rn.81079	NM_053808	F2rl3	Coagulation factor II (thrombin) receptor-like 3
B10	Rn.9980	NM_013057	F3	Coagulation factor III (thromboplastin, tissue factor)
B11	Rn.86416	NM_152846	F7	Coagulation factor VII (serum prothrombin conversion accelerator)
B12	Rn.34322	NM_033442	Gata2	GATA binding protein 2
C01	Rn.10346	NM_012567	Gja1	Gap junction protein, alpha 1
C02	Rn.11391	NM_013145	Gnai1	Guanine nucleotide binding protein (G protein), alpha inhibiting 1
C03	Rn.10148	NM_012945	Hbegf	Heparin-binding EGF-like growth factor
C04	Rn.9437	NM_013134	Hmgcr	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
C05	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
C06	Rn.11088	NM_013083	Hspa5	Heat shock protein 5
C07	Rn.12	NM_012967	Icam1	Intercellular adhesion molecule 1
C08	Rn.19222	NM_053355	Ikbkb	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C09	Rn.9868	NM_012854	Il10	Interleukin 10
C10	Rn.9921	NM_053828	Il13	Interleukin 13
C11	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
C12	Rn.108255	NM_201270	Il4	Interleukin 4
D01	Rn.9873	NM_012589	Il6	Interleukin 6
D02	Rn.54465	NM_012711	Itgam	Integrin, alpha M
D03	Rn.23339	NM_001106549	Itgav	Integrin, alpha V
D04	Rn.25733	NM_017022	Itgb1	Integrin, beta 1
D05	Rn.15806	NM_021836	Junb	Jun B proto-oncogene
D06	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
D07	Rn.44216	NM_021843	Kitlg	KIT ligand
D08	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
D09	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14

Position	UniGene	GenBank	Symbol	Description
D10	Rn.2661	NM_031051	Mif	Macrophage migration inhibitory factor
D11	Rn.79007	NM_001134530	Mmp1a	Matrix metallopeptidase 1a (interstitial collagenase)
D12	Rn.6422	NM_031054	Mmp2	Matrix metallopeptidase 2
E01	Rn.161939	NM_001134874	Nab2	Ngfi-A binding protein 2
E02	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E03	Rn.10000	NM_024388	Nr4a1	Nuclear receptor subfamily 4, group A, member 1
E04	Rn.6064	NM_013085	Plau	Plasminogen activator, urokinase
E05	Rn.82711	NM_017350	Plaur	Plasminogen activator, urokinase receptor
E06	Rn.6178	NM_001025750	Plek	Pleckstrin
E07	Rn.20178	NM_053491	Plg	Plasminogen
E08	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
E09	Rn.216481	NM_017171	Prkce	Protein kinase C, epsilon
E10	Rn.91064	NM_012803	Proc	Protein C
E11	Rn.144312	NM_001025733	Procr	Protein C receptor, endothelial
E12	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
F01	Rn.2809	NM_013081	Ptk2	PTK2 protein tyrosine kinase 2
F02	Rn.98209	NM_013088	Ptpn11	Protein tyrosine phosphatase, non-receptor type 11
F03	Rn.106948	XM_223688	Rel	V-rel reticuloendotheliosis viral oncogene homolog (avian)
F04	Rn.19480	NM_199267	Rela	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F05	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F06	Rn.20618	NM_001013430	Rhoh	Ras homolog gene family, member H
F07	Rn.4042	NM_031985	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F08	Rn.109455	NM_017301	S1pr1	Sphingosine-1-phosphate receptor 1
F09	Rn.108119	XM_225216	S1pr3	Sphingosine-1-phosphate receptor 3
F10	Rn.10359	NM_138879	Sele	Selectin E
F11	Rn.10012	NM_013114	Selp	Selectin P
F12	Rn.42912	NM_021696	Serpinb2	Serpin peptidase inhibitor, clade B (ovalbumin), member 2
G01	Rn.25752	NM_057108	Serpinb5	Serpin peptidase inhibitor, clade B (ovalbumin), member 5
G02	Rn.29367	NM_012620	Serpine1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
G03	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G04	Rn.15795	NM_017200	Tfpi	Tissue factor pathway inhibitor (lipoprotein-associated coagulation inhibitor)
G05	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G06	Rn.88295	NM_031771	Thbd	Thrombomodulin
G07	Rn.185771	NM_001013062	Thbs1	Thrombospondin 1
G08	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G09	Rn.54443	NM_030989	Tp53	Tumor protein p53
G10	Rn.11267	NM_012889	Vcam1	Vascular cell adhesion molecule 1
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.6913	NM_053653	Vegfc	Vascular endothelial growth factor C
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, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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
RT² SYBR Green ROX™ 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
RT² 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.

RT² 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 or can be requested from QIAGEN Technical Services or your local distributor.

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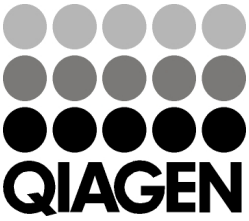

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