

# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene® Format)

## Mouse Protease Activated Receptor Signaling

Cat. no. 330231 PAMM-159ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

### Description

The Mouse Protease-Activated Receptor Signaling RT<sup>2</sup> 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.

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

## Shipping and storage

RT<sup>2</sup> Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

For long term storage, keep plates at –20°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

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

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

Position	UniGene	GenBank	Symbol	Description
A01	Mm.288206	NM_007406	Adcy7	Adenylate cyclase 7
A02	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A03	Mm.867	NM_011331	Ccl12	Chemokine (C-C motif) ligand 12
A04	Mm.101591	NM_010016	Cd55	CD55 antigen
A05	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
A06	Mm.795	NM_007778	Csf1	Colony stimulating factor 1 (macrophage)
A07	Mm.4922	NM_009969	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
A08	Mm.390287	NM_010217	Ctgf	Connective tissue growth factor
A09	Mm.4858	NM_007800	Ctsg	Cathepsin G
A10	Mm.244289	NM_203320	Cxcl3	Chemokine (C-X-C motif) ligand 3
A11	Mm.1231	NM_010516	Cyr61	Cysteine rich protein 61
A12	Mm.214717	NM_010051	Dkk1	Dickkopf homolog 1 (Xenopus laevis)
B01	Mm.181959	NM_007913	Egr1	Early growth response 1
B02	Mm.405823	NM_007922	Elk1	ELK1, member of ETS oncogene family
B03	Mm.292415	NM_011808	Ets1	E26 avian leukemia oncogene 1, 5' domain
B04	Mm.262589	NM_007972	F10	Coagulation factor X
B05	Mm.89048	NM_010168	F2	Coagulation factor II
B06	Mm.24816	NM_010169	F2r	Coagulation factor II (thrombin) receptor
B07	Mm.1614	NM_007974	F2r1	Coagulation factor II (thrombin) receptor-like 1
B08	Mm.440952	NM_010170	F2r2	Coagulation factor II (thrombin) receptor-like 2
B09	Mm.12948	NM_007975	F2r3	Coagulation factor II (thrombin) receptor-like 3
B10	Mm.273188	NM_010171	F3	Coagulation factor III
B11	Mm.4827	NM_010172	F7	Coagulation factor VII
B12	Mm.272747	NM_008090	Gata2	GATA binding protein 2
C01	Mm.378921	NM_010288	Gja1	Gap junction protein, alpha 1
C02	Mm.254629	NM_010305	Gnai1	Guanine nucleotide binding protein (G protein), alpha inhibiting 1
C03	Mm.289681	NM_010415	Hbegf	Heparin-binding EGF-like growth factor
C04	Mm.485394	NM_008255	Hmgcr	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
C05	Mm.334313	NM_008284	Hras1	Harvey rat sarcoma virus oncogene 1
C06	Mm.330160	NM_022310	Hspa5	Heat shock protein 5
C07	Mm.435508	NM_010493	Icam1	Intercellular adhesion molecule 1
C08	Mm.277886	NM_010546	Ikbbp	Inhibitor of kappaB kinase beta
C09	Mm.874	NM_010548	Il10	Interleukin 10
C10	Mm.1284	NM_008355	Il13	Interleukin 13
C11	Mm.222830	NM_008361	Il1b	Interleukin 1 beta
C12	Mm.276360	NM_021283	Il4	Interleukin 4
D01	Mm.1019	NM_031168	Il6	Interleukin 6
D02	Mm.262106	NM_008401	Itgam	Integrin alpha M
D03	Mm.227	NM_008402	Itgav	Integrin alpha V
D04	Mm.263396	NM_010578	Itgb1	Integrin beta 1 (fibronectin receptor beta)
D05	Mm.1167	NM_008416	Junb	Jun-B oncogene
D06	Mm.285	NM_010612	Kdr	Kinase insert domain protein receptor
D07	Mm.45124	NM_013598	Kitl	Kit ligand
D08	Mm.248907	NM_008927	Map2k1	Mitogen-activated protein kinase kinase 1
D09	Mm.311337	NM_011951	Mapk14	Mitogen-activated protein kinase 14
D10	Mm.2326	NM_010798	Mif	Macrophage migration inhibitory factor
D11	Mm.156952	NM_032006	Mmp1a	Matrix metalloproteinase 1a (interstitial collagenase)
D12	Mm.29564	NM_008610	Mmp2	Matrix metalloproteinase 2
E01	Mm.336898	NM_008668	Nab2	Ngfi-A binding protein 2
E02	Mm.329560	NM_016791	Nfya1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
E03	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1, p105
E04	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
E05	Mm.1359	NM_011113	Plaur	Plasminogen activator, urokinase receptor
E06	Mm.98232	NM_019549	Plek	Pleckstrin
E07	Mm.971	NM_008877	Plg	Plasminogen
E08	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
E09	Mm.24614	NM_011104	Prkce	Protein kinase C, epsilon

Position	UniGene	GenBank	Symbol	Description
E10	Mm.2786	NM_008934	Proc	Protein C
E11	Mm.3243	NM_011171	Procr	Protein C receptor, endothelial
E12	Mm.292547	NM_011198	Ptgs2	Prostaglandin-endoperoxide synthase 2
F01	Mm.254494	NM_007982	Ptk2	PTK2 protein tyrosine kinase 2
F02	Mm.8681	NM_011202	Ptpn11	Protein tyrosine phosphatase, non-receptor type 11
F03	Mm.4869	NM_009044	Rel	Reticuloendotheliosis oncogene
F04	Mm.249966	NM_009045	Rela	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F05	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
F06	Mm.20323	NM_001081105	Rhoh	Ras homolog gene family, member H
F07	Mm.394280	NM_028259	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F08	Mm.982	NM_007901	S1pr1	Sphingosine-1-phosphate receptor 1
F09	Mm.136736	NM_010101	S1pr3	Sphingosine-1-phosphate receptor 3
F10	Mm.5245	NM_011345	Sele	Selectin, endothelial cell
F11	Mm.3337	NM_011347	Selp	Selectin, platelet
F12	Mm.271870	NM_011111	Serpnb2	Serine (or cysteine) peptidase inhibitor, clade B, member 2
G01	Mm.268618	NM_009257	Serpnb5	Serine (or cysteine) peptidase inhibitor, clade B, member 5
G02	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
G03	Mm.22845	NM_009271	Src	Rous sarcoma oncogene
G04	Mm.124316	NM_011576	Tfpi	Tissue factor pathway inhibitor
G05	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G06	Mm.24096	NM_009378	Thbd	Thrombomodulin
G07	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G08	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G09	Mm.222	NM_011640	Trp53	Transformation related protein 53
G10	Mm.76649	NM_011693	Vcam1	Vascular cell adhesion molecule 1
G11	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G12	Mm.1402	NM_009506	Vegfc	Vascular endothelial growth factor C
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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 ROX™ FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

\* Larger kit sizes available; please inquire.

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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.

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