

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

## Rat Glucocorticoid Signaling

Cat. no. 330231 PARN-154ZR

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 Rat Glucocorticoid Signaling RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes involved in signaling initiated by the glucocorticoid receptor. Secreted by the adrenal cortex, glucocorticoid hormones affect several biological processes, from inhibiting inflammation to maintaining normal blood glucose levels and more. Signaling occurs when the glucocorticoid receptor binds the cell-permeable hormones, causing nuclear translocation, interaction with other co-transcription factors (indicating a role of crosstalk with other pathways), and the activation or repression of target gene expression. The therapeutic use of glucocorticoids (such as the commonly used prednisone, dexamethasone, or hydrocortisone) helps treat various disorders including allergies, asthma, autoimmune diseases, dermatitis, leukemia, lymphomas, and rheumatoid arthritis. Their immunosuppressant activity also helps prevent acute transplant rejection and graft-versus-host disease. Resistance and side-effects (such as the susceptibility to infection and inhibition of tissue repair processes) limit the long-term use of these drugs, but has spurred research into the development of safer glucocorticoid analogs. Examining glucocorticoid transcriptional responses could help provide a better understanding of their effects on biological processes in any target tissue. This array includes the glucocorticoid receptors and key co-transcription factors, but mostly target genes identified from studies simultaneously using both chromatin immunoprecipitation (ChIP) and gene expression in the two key responsive tissues: adipose and lung. A set of controls present on each array enables data analysis using the  $\Delta\Delta\text{CT}$  method of relative quantification, assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in glucocorticoid 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	Rn.89675	NM_012894	Adarb1	Adenosine deaminase, RNA-specific, B1
A02	Rn.214148	NM_001107206	Aff1	AF4/FMR2 family, member 1
A03	Rn.3421	NM_030986	Ak2	Adenylate kinase 2
A04	Rn.11106	NM_031544	Ampd3	Adenosine monophosphate deaminase 3
A05	Rn.119611	NM_199115	Angptl4	Angiopietin-like 4
A06	Rn.19270	NM_024155	Anxa4	Annexin A4
A07	Rn.1618	NM_012778	Aqp1	Aquaporin 1
A08	Rn.204911	NM_001107624	Arid5b	AT rich interactive domain 5B (Mrf1 like)
A09	Rn.22695	NM_001098239	Asph	Aspartate-beta-hydroxylase
A10	Rn.2423	NM_024403	Atf4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A11	Rn.20571	NM_001107084	Bcl6	B-cell CLL/lymphoma 6
A12	Rn.62611	NM_001135799	Bmper	BMP-binding endothelial regulator
B01	Rn.10062	NM_053816	Calcr	Calcitonin receptor
B02	Rn.204833	NM_012524	Cebpa	CCAAT/enhancer binding protein (C/EBP), alpha
B03	Rn.6479	NM_024125	Cebpb	CCAAT/enhancer binding protein (C/EBP), beta
B04	Rn.2237	XM_225043	Col4a2	Collagen, type IV, alpha 2
B05	Rn.90061	NM_031017	Creb1	CAMP responsive element binding protein 1
B06	Rn.104043	NM_001013092	Creb3	CAMP responsive element binding protein 3
B07	Rn.19624	NM_001007093	Creb3l4	CAMP responsive element binding protein 3-like 4
B08	Rn.17145	NM_022266	Ctgf	Connective tissue growth factor
B09	Rn.14673	NM_001107056	Cyb561	Cytochrome b-561
B10	Rn.9775	NM_080906	Ddit4	DNA-damage-inducible transcript 4
B11	Rn.11709	NM_001169578	Diras2	DIRAS family, GTP-binding RAS-like 2
B12	Rn.98260	NM_053769	Dusp1	Dual specificity phosphatase 1
C01	Rn.10918	NM_012548	Edn1	Endothelin 1
C02	Rn.7771	NM_138890	Ehd3	EH-domain containing 3
C03	Rn.100336	NM_001014071	Erff1	ERBB receptor feedback inhibitor 1
C04	Rn.144288	NM_001012174	Fkbp5	FK506 binding protein 5
C05	Rn.163577	NM_012954	Fosl2	Fos-like antigen 2
C06	Rn.138410	NM_001044238	Gdgd1	Glycerophosphodiester phosphodiesterase domain containing 1
C07	Rn.10936	NM_012850	Ghrhr	Growth hormone releasing hormone receptor
C08	Rn.2204	NM_017073	Glul	Glutamate-ammonia ligase (glutamine synthetase)
C09	Rn.5819	NM_012571	Got1	Glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)
C10	Rn.17292	NM_001106698	H6pd	Hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
C11	Rn.87393	NM_013153	Hos2	Hyaluronan synthase 2
C12	Rn.161893	XM_233805	Hnrpl	Heterogeneous nuclear ribonucleoprotein L-like
D01	Rn.9868	NM_012854	Il10	Interleukin 10
D02	Rn.162640	NM_022194	Il1rn	Interleukin 1 receptor antagonist
D03	Rn.9873	NM_012589	Il6	Interleukin 6
D04	Rn.1716	NM_017020	Il6r	Interleukin 6 receptor
D05	Rn.22229	NM_001109147	Klf13	Kruppel-like factor 13
D06	Rn.19481	NM_057211	Klf9	Kruppel-like factor 9
D07	Rn.11372	NM_017061	Lox	Lysyl oxidase
D08	Rn.207207	NM_022943	Mertk	C-mer proto-oncogene tyrosine kinase
D09	Rn.54397	NM_138826	Mt1a	Metallothionein 1a
D10	Rn.115549	NM_001137564	Mt2A	Metallothionein 2A
D11	Rn.12550	NM_001105720	Nfkb1a	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
D12	Rn.90070	NM_012576	Nr3c1	Nuclear receptor subfamily 3, group C, member 1
E01	Rn.8408	NM_001108768	Pdcd7	Programmed cell death 7
E02	Rn.98311	NM_031525	Pdgfrb	Platelet derived growth factor receptor, beta polypeptide
E03	Rn.31799	NM_019372	Pdp1	Pyruvate dehydrogenase phosphatase catalytic subunit 1
E04	Rn.34433	NM_001034125	Per1	Period homolog 1 (Drosophila)
E05	Rn.25935	NM_031678	Per2	Period homolog 2 (Drosophila)
E06	Rn.10599	NM_013005	Pik3r1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
E07	Rn.11130	NM_030992	Pld1	Phospholipase D1
E08	Rn.9380	NM_001013148	Plekhl1	Pleckstrin homology domain containing, family F (with FYVE domain) member 1

Position	UniGene	GenBank	Symbol	Description
E09	Rn.46306	NM_001100639	Pou2f1	POU class 2 homeobox 1
E10	Rn.155998	XM_341802	Pou2f2	POU class 2 homeobox 2
E11	Rn.23055	NM_031574	Rasa3	RAS p21 protein activator 3
E12	Rn.1892	NM_053453	Rgs2	Regulator of G-protein signaling 2
F01	Rn.2042	NM_022542	Rhob	Ras homolog gene family, member B
F02	Rn.6890	NM_001008320	Rhoj	Ras homolog gene family, member J
F03	Rn.22395	NM_001106396	Sesn1	Sestrin 1
F04	Rn.4636	NM_019232	Sgk1	Serum/glucocorticoid regulated kinase 1
F05	Rn.214951	NM_198049	Slc10a6	Solute carrier family 10 (sodium/bile acid cotransporter family), member 6
F06	Rn.19386	NM_001030024	Slc19a2	Solute carrier family 19 (thiamine transporter), member 2
F07	Rn.8844	NM_019269	Slc22a5	Solute carrier family 22 (organic cation/carnitine transporter), member 5
F08	Rn.139656	NM_001100901	Snta1	Syntrophin, acidic 1
F09	Rn.18522	NM_133386	Sphk1	Sphingosine kinase 1
F10	Rn.219023	NM_001107994	Spsb1	SplA/ryanodine receptor domain and SOCS box containing 1
F11	Rn.154399	NM_017064	Stat5a	Signal transducer and activator of transcription 5A
F12	Rn.54486	NM_022380	Stat5b	Signal transducer and activator of transcription 5B
G01	Rn.140831	NM_001108941	Tbl1xr1	Transducin (beta)-like 1 X-linked receptor 1
G02	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G03	Rn.48267	NM_181084	Tp53inp1	Tumor protein p53 inducible nuclear protein 1
G04	Rn.21970	NM_031345	Tsc22d3	TSC22 domain family, member 3
G05	Rn.203590	NM_053774	Usp2	Ubiquitin specific peptidase 2
G06	Rn.48329	NM_001008863	Usp54	Ubiquitin specific peptidase 54
G07	Rn.10911	NM_017058	Vdr	Vitamin D (1,25-dihydroxyvitamin D3) receptor
G08	Rn.9975	NM_013155	Vldlr	Very low density lipoprotein receptor
G09	Rn.202951	NM_017154	Xdh	Xanthine dehydrogenase
G10	Rn.204958	NM_001012030	Zfp281	Zinc finger protein 281
G11	Rn.82737	NM_133290	Zfp36	Zinc finger protein 36
G12	Rn.8221	NM_001047097	Zhx3	Zinc fingers and homeoboxes 3
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 ROX <sup>™</sup> 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.

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