

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

## Human Cellular Stress Responses

Cat. no. 330231 PAHS-019ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> 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
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®, DNA Engine Opticon 2; Stratagene Mx4000®
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® LightCycler® 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® BioMark™



Sample & Assay Technologies

## Description

The Human Cellular Stress Responses RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes involved in cellular stress response. This array includes genes encoding antioxidant and pro-oxidant enzymes, molecular chaperones and proteins involved in xenobiotic metabolism. Representative heat shock proteins and cytochrome P450 genes are also included. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to cellular stress response 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°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.

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## 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>	ACADSB	BAG1	CALR	CANX	CAT	CCT2	CCT3	CCT4	CCT5	CCT7	CCT8	CES1
<b>B</b>	CLU	CRYAA	CRYAB	CYP11A1	CYP11B2	CYP17A1	CYP1A1	CYP1A2	CYP1B1	CYP2C19	CYP2C9	CYP2D6
<b>C</b>	CYP2E1	CYP2F1	CYP3A4	CYP4A11	CYP4B1	CYP7A1	CYP7B1	DNAJA1	DNAJA2	DNAJA3	DNAJA4	DNAJB1
<b>D</b>	DNAJB11	DNAJB12	DNAJB2	DNAJB4	DNAJB5	DNAJB6	DNAJB9	DNAJC1	DNAJC4	DNAJC5	DNAJC6	DNAJC7
<b>E</b>	DNAJC8	DNAJC9	EPHX2	FMO1	FMO4	FMO5	GPX1	GPX2	GSR	GSTA1	GSTA5	GSTM5
<b>F</b>	HMOX1	HMOX2	HOPX	HSPA12A	HSPA1A	HSPA1L	HSPA2	HSPA4	HSPA5	HSPA8	HSPA9	HSPB1
<b>G</b>	HSPB2	HSPB3	HSPD1	HSPF1	PPID	SERPINH1	SOD1	SOD2	SOD3	ST13	TCP1	XDH
<b>H</b>	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description
A01	Hs.81934	NM_001609	ACADSB	Acyl-CoA dehydrogenase, short/branched chain
A02	Hs.377484	NM_004323	BAG1	BCL2-associated athanogene
A03	Hs.515162	NM_004343	CALR	Calreticulin
A04	Hs.699155	NM_001746	CANX	Calnexin
A05	Hs.502302	NM_001752	CAT	Catalase
A06	Hs.189772	NM_006431	CCT2	Chaperonin containing TCP1, subunit 2 (beta)
A07	Hs.491494	NM_005998	CCT3	Chaperonin containing TCP1, subunit 3 (gamma)
A08	Hs.421509	NM_006430	CCT4	Chaperonin containing TCP1, subunit 4 (delta)
A09	Hs.1600	NM_012073	CCT5	Chaperonin containing TCP1, subunit 5 (epsilon)
A10	Hs.368149	NM_006429	CCT7	Chaperonin containing TCP1, subunit 7 (eta)
A11	Hs.125113	NM_006585	CCT8	Chaperonin containing TCP1, subunit 8 (theta)
A12	Hs.558865	NM_001266	CES1	Carboxylesterase 1
B01	Hs.436657	NM_001831	CLU	Clusterin
B02	Hs.184085	NM_000394	CRYAA	Crystallin, alpha A
B03	Hs.408767	NM_001885	CRYAB	Crystallin, alpha B
B04	Hs.303980	NM_000781	CYP11A1	Cytochrome P450, family 11, subfamily A, polypeptide 1
B05	Hs.632054	NM_000498	CYP11B2	Cytochrome P450, family 11, subfamily B, polypeptide 2
B06	Hs.438016	NM_000102	CYP17A1	Cytochrome P450, family 17, subfamily A, polypeptide 1
B07	Hs.72912	NM_000499	CYP1A1	Cytochrome P450, family 1, subfamily A, polypeptide 1
B08	Hs.1361	NM_000761	CYP1A2	Cytochrome P450, family 1, subfamily A, polypeptide 2
B09	Hs.154654	NM_000104	CYP1B1	Cytochrome P450, family 1, subfamily B, polypeptide 1
B10	Hs.282409	NM_000769	CYP2C19	Cytochrome P450, family 2, subfamily C, polypeptide 19
B11	Hs.282624	NM_000771	CYP2C9	Cytochrome P450, family 2, subfamily C, polypeptide 9
B12	Hs.648256	NM_000106	CYP2D6	Cytochrome P450, family 2, subfamily D, polypeptide 6
C01	Hs.12907	NM_000773	CYP2E1	Cytochrome P450, family 2, subfamily E, polypeptide 1
C02	Hs.558318	NM_000774	CYP2F1	Cytochrome P450, family 2, subfamily F, polypeptide 1
C03	Hs.654391	NM_017460	CYP3A4	Cytochrome P450, family 3, subfamily A, polypeptide 4
C04	Hs.1645	NM_000778	CYP4A11	Cytochrome P450, family 4, subfamily A, polypeptide 11
C05	Hs.436317	NM_000779	CYP4B1	Cytochrome P450, family 4, subfamily B, polypeptide 1
C06	Hs.1644	NM_000780	CYP7A1	Cytochrome P450, family 7, subfamily A, polypeptide 1
C07	Hs.667720	NM_004820	CYP7B1	Cytochrome P450, family 7, subfamily B, polypeptide 1
C08	Hs.445203	NM_001539	DNAJA1	DnaJ (Hsp40) homolog, subfamily A, member 1
C09	Hs.368078	NM_005880	DNAJA2	DnaJ (Hsp40) homolog, subfamily A, member 2
C10	Hs.459779	NM_005147	DNAJA3	DnaJ (Hsp40) homolog, subfamily A, member 3
C11	Hs.513053	NM_018602	DNAJA4	DnaJ (Hsp40) homolog, subfamily A, member 4
C12	Hs.515210	NM_006145	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1
D01	Hs.317192	NM_016306	DNAJB11	DnaJ (Hsp40) homolog, subfamily B, member 11
D02	Hs.696014	NM_017626	DNAJB12	DnaJ (Hsp40) homolog, subfamily B, member 12
D03	Hs.77768	NM_006736	DNAJB2	DnaJ (Hsp40) homolog, subfamily B, member 2
D04	Hs.13852	NM_007034	DNAJB4	DnaJ (Hsp40) homolog, subfamily B, member 4
D05	Hs.237506	NM_012266	DNAJB5	DnaJ (Hsp40) homolog, subfamily B, member 5
D06	Hs.490745	NM_005494	DNAJB6	DnaJ (Hsp40) homolog, subfamily B, member 6
D07	Hs.6790	NM_012328	DNAJB9	DnaJ (Hsp40) homolog, subfamily B, member 9
D08	Hs.499000	NM_022365	DNAJC1	DnaJ (Hsp40) homolog, subfamily C, member 1
D09	Hs.172847	NM_005528	DNAJC4	DnaJ (Hsp40) homolog, subfamily C, member 4

Position	UniGene	GenBank	Symbol	Description
D10	Hs.164419	NM_025219	DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5
D11	Hs.647643	NM_014787	DNAJC6	DnaJ (Hsp40) homolog, subfamily C, member 6
D12	Hs.500156	NM_003315	DNAJC7	DnaJ (Hsp40) homolog, subfamily C, member 7
E01	Hs.433540	NM_014280	DNAJC8	DnaJ (Hsp40) homolog, subfamily C, member 8
E02	Hs.654694	NM_015190	DNAJC9	DnaJ (Hsp40) homolog, subfamily C, member 9
E03	Hs.212088	NM_001979	EPHX2	Epoxide hydrolase 2, cytoplasmic
E04	Hs.1424	NM_002021	FMO1	Flavin containing monooxygenase 1
E05	Hs.386502	NM_002022	FMO4	Flavin containing monooxygenase 4
E06	Hs.642706	NM_001461	FMO5	Flavin containing monooxygenase 5
E07	Hs.76686	NM_000581	GPX1	Glutathione peroxidase 1
E08	Hs.2704	NM_002083	GPX2	Glutathione peroxidase 2 (gastrointestinal)
E09	Hs.271510	NM_000637	GSR	Glutathione reductase
E10	Hs.446309	NM_145740	GSTA1	Glutathione S-transferase alpha 1
E11	Hs.646984	NM_153699	GSTA5	Glutathione S-transferase alpha 5
E12	Hs.75652	NM_000851	GSTM5	Glutathione S-transferase mu 5
F01	Hs.517581	NM_002133	HMOX1	Heme oxygenase (decycling) 1
F02	Hs.284279	NM_002134	HMOX2	Heme oxygenase (decycling) 2
F03	Hs.654864	NM_139211	HOPX	HOP homeobox
F04	Hs.654682	NM_025015	HSPA12A	Heat shock 70kDa protein 12A
F05	Hs.728810	NM_005345	HSPA1A	Heat shock 70kDa protein 1A
F06	Hs.690634	NM_005527	HSPA1L	Heat shock 70kDa protein 1-like
F07	Hs.728938	NM_021979	HSPA2	Heat shock 70kDa protein 2
F08	Hs.90093	NM_002154	HSPA4	Heat shock 70kDa protein 4
F09	Hs.716396	NM_005347	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
F10	Hs.702021	NM_006597	HSPA8	Heat shock 70kDa protein 8
F11	Hs.184233	NM_004134	HSPA9	Heat shock 70kDa protein 9 (mortalin)
F12	Hs.520973	NM_001540	HSPB1	Heat shock 27kDa protein 1
G01	Hs.709660	NM_001541	HSPB2	Heat shock 27kDa protein 2
G02	Hs.41707	NM_006308	HSPB3	Heat shock 27kDa protein 3
G03	Hs.595053	NM_002156	HSPD1	Heat shock 60kDa protein 1 (chaperonin)
G04	Hs.1197	NM_002157	HSPE1	Heat shock 10kDa protein 1 (chaperonin 10)
G05	Hs.581725	NM_005038	PPID	Peptidylprolyl isomerase D
G06	Hs.596449	NM_001235	SERPINH1	Serpin peptidase inhibitor, clade H (heat shock protein 47), member 1, (collagen binding protein 1)
G07	Hs.443914	NM_000454	SOD1	Superoxide dismutase 1, soluble
G08	Hs.487046	NM_000636	SOD2	Superoxide dismutase 2, mitochondrial
G09	Hs.2420	NM_003102	SOD3	Superoxide dismutase 3, extracellular
G10	Hs.707999	NM_003932	ST13	Suppression of tumorigenicity 13 (colon carcinoma) (Hsp70 interacting protein)
G11	Hs.363137	NM_030752	TCP1	T-complex 1
G12	Hs.250	NM_000379	XDH	Xanthine dehydrogenase
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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™ 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.

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