

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

## Rat Huntington's Disease

Cat. no. 330231 PARN-123ZA

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 Rat Huntington's Disease RT<sup>2</sup> Profiler™ PCR Array profiles the expression of 84 key genes directly or potentially involved in Huntington's disease (HD). HD, an autosomal dominant genetic disorder caused by expanded CAG repeats in the Huntingtin (HTT) gene, patients present with progressive neuronal dysfunction, and eventually death. HTT interacts with multiple transcription factors (e.g. REST and SP1). HTT mutations have multiple effects, including loss of anti-apoptotic function as well as altered interactions between HTT and transcription factors, affecting downstream expression of target genes. For example, HTT sequesters REST in the cytoplasm. Mutant HTT's decreased interaction with REST allows the transcription factor to enter the nucleus and repress BDNF gene expression. BDNF is critical for striatal neuron survival, and its down-regulation leads to neuronal death.

Microarray gene expression analyses of human cadavers and mouse HD models have identified many genes that may be involved in HD progression. Analysis of these dysregulated genes in your model system may provide insights into HD pathophysiological mechanisms and suggestions for new therapeutic targets. This array includes known HTT cofactors and downstream interactors, as well as SP1 and REST targets whose expression changes correlate across multiple HD microarray analyses. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes central to Huntington's disease progression 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.

---

## 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>	Akt1	ApoE	Aqp1	Arfp2	Atp2b2	Bax	Bbox1	Bdnf	C3	Calb1	Casp3	Casp8
<b>B</b>	Cd44	Cltc	Cnr1	Creb1	Crebbp	Dctn1	Dlg4	Eef1a2	Egfr	Elmo1	Fgf12	Gabrd
<b>C</b>	Gja1	Gjb6	Gnaq	Gpx1	Grb2	Grin2a	Grin2b	Grm5	Hap1	Hdac1	Hdac2	Hip1
<b>D</b>	Homer1	Hpca	Htt	Ift57	Igf1	Itpr1	Kcnab1	Kcnab2	Kcnc3	Lpl	Map3k10	Ncar1
<b>E</b>	Nefl	Ngef	Ntrk2	Pacsin1	Pgk1	Picb4	Plod2	Ppargc1a	Ppp3ca	Prkcb	Prpf40a	Pipn11
<b>F</b>	Rab6a	Rcor1	Rest	Rgs4	Rilp	Rph3a	Rxb	Sgk1	Sin3a	Slc14a1	Slc25a4	Snap25
<b>G</b>	Sod1	Sox2	Sp1	Sympk	Syn1	Tac1	Tbp	Tgm2	Tollip	Tp53	Tubb5	Zbtb16
<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.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A02	Rn.32351	NM_138828	ApoE	Apolipoprotein E
A03	Rn.1618	NM_012778	Aqp1	Aquaporin 1
A04	Rn.73878	NM_001004222	Arfp2	ADP-ribosylation factor interacting protein 2
A05	Rn.90982	NM_012508	Atp2b2	ATPase, Ca++ transporting, plasma membrane 2
A06	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A07	Rn.16333	NM_022629	Bbox1	Butyrobetaine (gamma), 2-oxoglutarate dioxygenase (gamma-butyrobetaine hydroxylase) 1
A08	Rn.11266	NM_012513	Bdnf	Brain-derived neurotrophic factor
A09	Rn.11378	NM_016994	C3	Complement component 3
A10	Rn.3908	NM_031984	Calb1	Calbindin 1
A11	Rn.10562	NM_012922	Casp3	Caspase 3
A12	Rn.54474	NM_022277	Casp8	Caspase 8
B01	Rn.1120	NM_012924	Cd44	Cd44 molecule
B02	Rn.3589	NM_019299	Cltc	Clathrin, heavy chain (Hc)
B03	Rn.89774	NM_012784	Cnr1	Cannabinoid receptor 1 (brain)
B04	Rn.90061	NM_031017	Creb1	CAMP responsive element binding protein 1
B05	Rn.108128	NM_133381	Crebbp	CREB binding protein
B06	Rn.11284	NM_024130	Dctn1	Dynactin 1
B07	Rn.9765	NM_019621	Dlg4	Discs, large homolog 4 (Drosophila)
B08	Rn.9764	NM_012660	Eef1a2	Eukaryotic translation elongation factor 1 alpha 2
B09	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
B10	Rn.24911	NM_001108415	Elmo1	Engulfment and cell motility 1
B11	Rn.45965	NM_130814	Fgf12	Fibroblast growth factor 12
B12	Rn.10927	NM_017289	Gabrd	Gamma-aminobutyric acid (GABA) A receptor, delta
C01	Rn.10346	NM_012567	Gja1	Gap junction protein, alpha 1
C02	Rn.18935	NM_053388	Gjb6	Gap junction protein, beta 6
C03	Rn.22817	NM_031036	Gnaq	Guanine nucleotide binding protein (G protein), q polypeptide
C04	Rn.11323	NM_030826	Gpx1	Glutathione peroxidase 1
C05	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
C06	Rn.9710	NM_012573	Grin2a	Glutamate receptor, ionotropic, N-methyl D-aspartate 2A
C07	Rn.9711	NM_012574	Grin2b	Glutamate receptor, ionotropic, N-methyl D-aspartate 2B
C08	Rn.29972	NM_017012	Grm5	Glutamate receptor, metabotropic 5
C09	Rn.37430	NM_024133	Hap1	Huntingtin-associated protein 1
C10	Rn.1863	NM_001025409	Hdac1	Histone deacetylase 1
C11	Rn.1797	NM_053447	Hdac2	Histone deacetylase 2
C12	Rn.836	NM_001100475	Hip1	Huntingtin interacting protein 1
D01	Rn.37500	NM_031707	Homer1	Homer homolog 1 (Drosophila)
D02	Rn.11019	NM_017122	Hpca	Hippocalcin
D03	Rn.11193	NM_024357	Htt	Huntingtin
D04	Rn.63846	NM_001107093	Ift57	Intraflagellar transport 57 homolog (Chlamydomonas)
D05	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D06	Rn.2135	NM_001007235	Itpr1	Inositol 1,4,5-triphosphate receptor, type 1
D07	Rn.32090	NM_017303	Kcnab1	Potassium voltage-gated channel, shaker-related subfamily, beta member 1
D08	Rn.10757	NM_017304	Kcnab2	Potassium voltage-gated channel, shaker-related subfamily, beta member 2

Position	UniGene	GenBank	Symbol	Description
D09	Rn.9885	NM_053997	Kcnc3	Potassium voltage gated channel, Shaw-related subfamily, member 3
D10	Rn.3834	NM_012598	Lpl	Lipoprotein lipase
D11	Rn.130504	XM_218368	Map3k10	Mitogen activated protein kinase kinase kinase 10
D12	Rn.24948	XM_001077495	Ncor1	Nuclear receptor co-repressor 1
E01	Rn.18568	NM_031783	Nefl	Neurofilament, light polypeptide
E02	Rn.20670	NM_001136241	Ngef	Neuronal guanine nucleotide exchange factor
E03	Rn.11246	NM_012731	Ntrk2	Neurotrophic tyrosine kinase, receptor, type 2
E04	Rn.161729	NM_017294	Pacsin1	Protein kinase C and casein kinase substrate in neurons 1
E05	Rn.108127	NM_053291	Pgk1	Phosphoglycerate kinase 1
E06	Rn.6155	NM_024353	Plcb4	Phospholipase C, beta 4
E07	Rn.12945	NM_175869	Plod2	Procollagen lysine, 2-oxoglutarate 5-dioxygenase 2
E08	Rn.19172	NM_031347	Ppargc1a	Peroxisome proliferator-activated receptor gamma, coactivator 1 alpha
E09	Rn.6866	NM_017041	Ppp3ca	Protein phosphatase 3, catalytic subunit, alpha isoform
E10	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta
E11	Rn.95204	NM_001106480	Prp40a	PRP40 pre-mRNA processing factor 40 homolog A (S. cerevisiae)
E12	Rn.98209	NM_013088	Ptpn11	Protein tyrosine phosphatase, non-receptor type 11
F01	Rn.1695	NM_053366	Rab6a	RAB6A, member RAS oncogene family
F02	Rn.32217	NM_001108060	Rcor1	REST corepressor 1
F03	Rn.10879	NM_031788	Rest	RE1-silencing transcription factor
F04	Rn.11065	NM_017214	Rgs4	Regulator of G-protein signaling 4
F05	Rn.84076	NM_001105811	Rilp	Rab interacting lysosomal protein
F06	Rn.10976	NM_133518	Rph3a	Rabphilin 3A
F07	Rn.49295	NM_206849	Rxb	Retinoid X receptor beta
F08	Rn.4636	NM_019232	Sgk1	Serum/glucocorticoid regulated kinase 1
F09	Rn.63749	NM_001108761	Sin3a	SIN3 homolog A, transcription regulator (yeast)
F10	Rn.10654	NM_019346	Slc14a1	Solute carrier family 14 (urea transporter), member 1
F11	Rn.4092	NM_053515	Slc25a4	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
F12	Rn.107689	NM_030991	Snap25	Synaptosomal-associated protein 25
G01	Rn.6059	NM_017050	Sod1	Superoxide dismutase 1, soluble
G02	Rn.219221	NM_001109181	Sox2	SRY (sex determining region Y)-box 2
G03	Rn.44609	NM_012655	Sp1	Sp1 transcription factor
G04	Rn.44851	NM_001100830	Sympk	Symplekin
G05	Rn.9923	NM_019133	Syn1	Synapsin I
G06	Rn.1920	NM_012666	Tac1	Tachykinin 1
G07	Rn.22712	NM_001004198	Tbp	TATA box binding protein
G08	Rn.10	NM_019386	Tgm2	Transglutaminase 2, C polypeptide
G09	Rn.137040	NM_001109668	Tollip	Toll interacting protein
G10	Rn.54443	NM_030989	Tp53	Tumor protein p53
G11	Rn.2458	NM_173102	Tubb5	Tubulin, beta 5
G12	Rn.214576	NM_001013181	Zbtb16	Zinc finger and BTB domain containing 16
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™ 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