

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

## Cow Oxidative Stress

Cat. no. 330231 PABT-065Z

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format A	Applied Biosystems <sup>®</sup> models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad <sup>®</sup> models iCycler <sup>®</sup> , iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf <sup>®</sup> Mastercycler <sup>®</sup> ep realplex models 2, 2s, 4, 4s; Stratagene <sup>®</sup> models Mx3005P <sup>®</sup> , Mx3000P <sup>®</sup> ; 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 <sup>®</sup> , DNA Engine Opticon 2; Stratagene Mx4000 <sup>®</sup>
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 <sup>®</sup> LightCycler <sup>®</sup> 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 <sup>®</sup> BioMark™



## Description

The Cow Oxidative Stress RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes related to oxidative stress. Peroxidases are represented on this array including glutathione peroxidases (GPx) and peroxiredoxins (TPx). Also included are the genes involved in reactive oxygen species (ROS) metabolism, such as oxidative stress responsive genes and genes involved in superoxide metabolism such as superoxide dismutases (SOD). Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to oxidative stress 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
A	ALB	ALOX12	AOX1	APOE	ATOX1	BNIP3	CAT	CCL5	CCS	CYBB	CYGB	DHCR24
B	DUOX1	DUOX2	DUSP1	EPHX2	FOXO1	FTH1	GCLC	GCLM	GPX1	GPX2	GPX3	GPX4
C	GPX5	GPX6	GPX7	GSR	GSS	GSTP1	GSTZ1	GTF2I	HMOX1	HSPA1A	LOC788751	LPO
D	MB	MBL2	MGST3	MPO	MPV17	MSRA	MT3	NCF1	NCF2	NOS2	NOX4	NOX5
E	NOXA1	NGO1	NUDT1	OXR1	OXS1	PDLIM1	PNKP	PRDX1	PRDX2	PRDX3	PRDX4	PRDX5
F	PRDX6	PREX1	PRNP	PTGS1	PTGS2	PXDN	RNF7	SCARA3	SEPP1	SFTPD	SIRT2	SOD1
G	SOD2	SOD3	SQSTM1	SRXN1	STK25	TPO	TTN	TXN	TXNRD1	TXNRD2	UCP2	VIMP
H	ACTB	GAPDH	HPRT1	TBP	YWHAZ	BGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description	Assay
A01	Bt.106669	NM_180992	ALB	Albumin	PPB00024A
A02	Bt.92152	NM_001192336	ALOX12	Arachidonate 12-lipoxygenase	PPB01775A
A03	Bt.45005	NM_176668	AOX1	Aldehyde oxidase 1	PPB01539A
A04	Bt.34980	NM_173991	APOE	Apolipoprotein E	PPB00187A
A05	Bt.91138	NM_001130758	ATOX1	ATX1 antioxidant protein 1 homolog (yeast)	PPB12722A
A06	Bt.1411	NM_001076366	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3	PPB13203A
A07	Bt.48925	NM_001035386	CAT	Catalase	PPB09178A
A08	Bt.552	NM_175827	CCL5	Chemokine (C-C motif) ligand 5	PPB01458A
A09	Bt.53065	NM_001046187	CCS	Copper chaperone for superoxide dismutase	PPB06270A
A10	Bt.4558	NM_174035	CYBB	Cytochrome b-245, beta polypeptide	PPB00251A
A11	Bt.35774	NM_001206720	CYGB	Cytoglobin	PPB04382A
A12	Bt.106930	NM_001103276	DHCR24	24-dehydrocholesterol reductase	PPB09699A
B01	Bt.61746	NM_001205674	DUOX1	Dual oxidase 1	PPB04436A
B02	N/A	XM_005201080	DUOX2	Dual oxidase 2	PPB15275A
B03	Bt.1658	NM_001046452	DUSP1	Dual specificity phosphatase 1	PPB11239A
B04	Bt.87687	NM_001075534	EPHX2	Epoxide hydrolase 2, cytoplasmic	PPB04967A
B05	N/A	XM_001249704	FOXO1	Forkhead box M1	PPB05706A
B06	Bt.5321	NM_174062	FTH1	Ferritin, heavy polypeptide 1	PPB00293A
B07	Bt.103678	NM_001083674	GCLC	Glutamate-cysteine ligase, catalytic subunit	PPB05241A
B08	Bt.20267	NM_001038143	GCLM	Glutamate-cysteine ligase, modifier subunit	PPB08255A
B09	Bt.4317	NM_174076	GPX1	Glutathione peroxidase 1	PPB00320A
B10	Bt.29621	NM_001163139	GPX2	Glutathione peroxidase 2	PPB09493A
B11	Bt.12916	NM_174077	GPX3	Glutathione peroxidase 3 (plasma)	PPB00321A
B12	Bt.49234	NM_174770	GPX4	Glutathione peroxidase 4 (phospholipid hydroperoxidase)	PPB01270A
C01	Bt.46904	NM_001025335	GPX5	Glutathione peroxidase 5 (epididymal androgen-related protein)	PPB08308A
C02	Bt.27962	NM_001163142	GPX6	Glutathione peroxidase 6	PPB07243A
C03	Bt.11662	NM_001101113	GPX7	Glutathione peroxidase 7	PPB07881A
C04	Bt.612	NM_001114190	GSR	Glutathione reductase	PPB02905A
C05	Bt.9056	NM_001015630	GSS	Glutathione synthetase	PPB08154A
C06	Bt.13949	NM_177516	GSTP1	Glutathione S-transferase pi 1	PPB00683A
C07	Bt.45287	NM_001075686	GSTZ1	Glutathione transferase zeta 1	PPB06185A
C08	Bt.10542	NM_001102177	GTF2I	General transcription factor Iii	PPB10040A
C09	Bt.4001	NM_001014912	HMOX1	Heme oxygenase (decycling) 1	PPB05531A
C10	Bt.49659	NM_174550	HSPA1A	Heat shock 70kDa protein 1A	PPB00694A
C11	N/A	XM_002695595	LOC788751	Eosinophil peroxidase	PPB15570A
C12	Bt.4784	NM_173933	LPO	Lactoperoxidase	PPB00099A
D01	Bt.107415	NM_173881	MB	Myoglobin	PPB00011A
D02	Bt.360	NM_174107	MBL2	Mannose-binding lectin (protein C) 2, soluble	PPB00366A
D03	Bt.1157	NM_001035046	MGST3	Microsomal glutathione S-transferase 3	PPB03267A
D04	Bt.23901	NM_001113298	MPO	Myeloperoxidase	PPB04769A
D05	Bt.61837	NM_001045929	MPV17	MpV17 mitochondrial inner membrane protein	PPB02648A
D06	Bt.4655	NM_174114	MSRA	Methionine sulfoxide reductase A	PPB00376A
D07	Bt.16213	NM_001113304	MT3	Metallothionein 3	PPB12452A
D08	Bt.142	NM_174119	NCF1	Neutrophil cytosolic factor 1	PPB00386A
D09	Bt.143	NM_174120	NCF2	Neutrophil cytosolic factor 2	PPB00387A

Position	UniGene	GenBank	Symbol	Description	Assay
D10	Bt.23126	NM_001076799	NOS2	Nitric oxide synthase 2, inducible	PPB01230A
D11	Bt.23582	XM_002699032	NOX4	NADPH oxidase 4	PPB01616A
D12	Bt.100200	NM_001101137	NOX5	NADPH oxidase, EF-hand calcium binding domain 5	PPB09122A
E01	Bt.28781	NM_001102075	NOXA1	NADPH oxidase activator 1	PPB07858A
E02	Bt.49629	NM_001034535	NQO1	NAD(P)H dehydrogenase, quinone 1	PPB07298A
E03	N/A	XM_002698230	NUDT1	Nudix (nucleoside diphosphate linked moiety X)-type motif 1	PPB08226A
E04	Bt.13538	NM_001076148	OXR1	Oxidation resistance 1	PPB11194A
E05	Bt.25047	NM_001075892	OXSRI	Oxidative-stress responsive 1	PPB08447A
E06	Bt.32810	NM_001035455	PDLIM1	PDZ and LIM domain 1	PPB12959A
E07	Bt.24573	NM_001083522	PNKP	Polynucleotide kinase 3'-phosphatase	PPB13675A
E08	Bt.65324	NM_174431	PRDX1	Peroxiredoxin 1	PPB00805A
E09	Bt.2689	NM_174763	PRDX2	Peroxiredoxin 2	PPB01256A
E10	Bt.103308	NM_174432	PRDX3	Peroxiredoxin 3	PPB00806A
E11	Bt.5203	NM_174433	PRDX4	Peroxiredoxin 4	PPB00807A
E12	Bt.47193	NM_174749	PRDX5	Peroxiredoxin 5	PPB01239A
F01	Bt.49705	NM_174643	PRDX6	Peroxiredoxin 6	PPB01087A
F02	N/A	XM_010811758	PREX1	Phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1	PPB08517A
F03	Bt.4737	NM_001271625	PRNP	Prion protein	PPB00434A
F04	Bt.2151	NM_001105323	PTGS1	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)	PPB00825A
F05	Bt.15758	NM_174445	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	PPB00826A
F06	N/A	XM_010800841	PXDN	Peroxidasin homolog (Drosophila)	PPB06609A
F07	Bt.17228	NM_001075720	RNF7	Ring finger protein 7	PPB06512A
F08	N/A	XM_002689483	SCARA3	Scavenger receptor class A, member 3	PPB12336A
F09	Bt.64610	NM_174459	SEPP1	Selenoprotein P, plasma, 1	PPB00847A
F10	Bt.33887	NM_181026	SFTPD	Surfactant protein D	PPB00851A
F11	Bt.19604	NM_001113531	SIRT2	Sirtuin 2	PPB02100A
F12	Bt.49637	NM_174615	SOD1	Superoxide dismutase 1, soluble	PPB00472A
G01	Bt.4748	NM_201527	SOD2	Superoxide dismutase 2, mitochondrial	PPB00473A
G02	Bt.1616	NM_001082610	SOD3	Superoxide dismutase 3, extracellular	PPB09315A
G03	Bt.28031	NM_176641	SQSTM1	Sequestosome 1	PPB01511A
G04	Bt.13906	NM_001205988	SRXN1	Sulfiredoxin 1	PPB09169A
G05	Bt.23261	NM_183407	STK25	Serine/threonine kinase 25	PPB01615A
G06	N/A	XM_002683944	TPO	Thyroid peroxidase	PPB08146A
G07	Bt.36692	XM_010801870	TTN	Titin	PPB12018A
G08	Bt.231	NM_173968	TXN	Thioredoxin	PPB00156A
G09	Bt.5534	NM_174625	TXNRD1	Thioredoxin reductase 1	PPB01063A
G10	Bt.4008	NM_174626	TXNRD2	Thioredoxin reductase 2	PPB01064A
G11	Bt.5180	NM_001033611	UCP2	Uncoupling protein 2 (mitochondrial, proton carrier)	PPB00508A
G12	Bt.15696	NM_001046114	VIMP	Selenoprotein S	PPB05171A
H01	Bt.14186	NM_173979	ACTB	Actin, beta	PPB00173A
H02	Bt.87389	NM_001034034	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase	PPB00298A
H03	Bt.49238	NM_001034035	HPRT1	Hypoxanthine phosphoribosyltransferase 1	PPB00330A
H04	Bt.22662	NM_001075742	TBP	TATA box binding protein	PPB06797A
H05	Bt.111451	NM_174814	YWHAZ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide	PPB01343A
H06	N/A	SA_00137	BGDC	Cow Genomic DNA Contamination	PPB71596A
H07	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H08	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H09	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H10	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H11	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H12	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A

## 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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