

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

## Zebrafish WNT Signaling Pathway

Cat. no. 330231 PAZF-043Z

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 Zebrafish WNT Signaling Pathway RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes related to WNT-mediated signal transduction. The WNT family of secreted growth factors regulates the developmental processes of cell fate and polarity, as well as general cell maintenance processes such as homeostasis and cell cycle regulation. There are several WNT ligands in Zebrafish, which bind to the Frizzled (FZD) family of receptors and the co-receptors LRP5 and LRP6. WNT signaling comprises three pathways: the canonical pathway and two non-canonical pathways, planar cell polarity (PCP) and a calcium ion-dependent pathway. The well-studied canonical WNT pathway signals through  $\beta$ -catenin and regulates the cell cycle, cell growth, and proliferation. The PCP pathway regulates cytoskeletal dynamics and cell motility, and the WNT/calcium pathway promotes NFAT transcription, both independently of  $\beta$ -catenin signaling. This array contains WNT signaling ligands and receptors as well as other downstream signaling molecules for all three pathways. In addition, regulators of WNT signaling are included as well as downstream target genes. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to WNT-mediated signal transduction 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  $-20^{\circ}\text{C}$ .

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	aes	apc	axin1	axin2	bcl9	bod1	calm1a	ccnd1	ccnd2a	chsy1	csnk1a1	csnk2a1
B	ctbp1	ctnnb1	ctnnbip1	cxadr	cyp4v8	daam1a	dab2	dkk1a	dkk3b	dvl1a	dvl2	ep300a
C	fbxw11a	fgf4	fosl1a	frzb	fzd1	fzd2	fzd3a	fzd4	fzd5	fzd6	fzd7a	fzd8a
D	fzd9a	gsk3aa	gsk3b	jun	kremen1	lef1	lrp5	lrp6	mapk8a	mtfp1	mtss1	myca
E	nav2	nfatc1	nkx1	nlk1	pitx2	porcn	pparda	prickle1a	prmt6	pygo1	rhoaa	ruvbl1
F	sfrp1a	skp2	sox17	tcf7	tcf7l1a	vangl2	wf1	wisp1a	wnt1	wnt10a	wnt11	wnt16
G	wnt2	wnt2ba	wnt3	wnt3a	wnt4a	wnt5a	wnt5b	wnt6b	wnt7aa	wnt7ba	wnt8a	wnt9a
H	acta1b	b2m	hprt1	nono	rpl13a	ZGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description	Assay
A01	Dr.81641	NM_200423	aes	Amino-terminal enhancer of split	PPZ03578A
A02	Dr.76198	NM_001143840	apc	Adenomatosis polyposis coli	PPZ03234A
A03	Dr.80549	NM_131503	axin1	Axin 1	PPZ00524A
A04	Dr.3727	NM_131561	axin2	Axin 2 (conductin, axil)	PPZ00587A
A05	Dr.79924	NM_001005604	bcl9	Si:ch73-15j19.1	PPZ06544A
A06	Dr.45837	NM_001076712	bod1	Biorientation of chromosomes in cell division 1	PPZ14066A
A07	Dr.76175	NM_213351	calm1a	Calmodulin 1a	PPZ05093A
A08	Dr.75056	NM_131025	ccnd1	Cyclin D1	PPZ00106A
A09	Dr.159818	NM_001089445	ccnd2a	Cyclin D2, a	PPZ15329A
A10	Dr.78655	NM_212678	chsy1	Chondroitin sulfate synthase 1	PPZ01727A
A11	Dr.132291	NM_152951	csnk1a1	Casein kinase 1, alpha 1	PPZ00988A
A12	Dr.75097	NM_131252	csnk2a1	Casein kinase 2, alpha 1 polypeptide	PPZ00304A
B01	Dr.158910	NM_131714	ctbp1	C-terminal binding protein 1	PPZ00729A
B02	Dr.120367	NM_131059	ctnnb1	Catenin (cadherin-associated protein), beta 1	PPZ00136A
B03	Dr.120421	NM_131594	ctnnbip1	Catenin, beta interacting protein 1	PPZ00616A
B04	Dr.11571	NM_152948	cxadr	Coxsackie virus and adenovirus receptor	PPZ14488A
B05	Dr.79965	NM_001077602	cyp4v8	Cytochrome P450, family 4, subfamily V, polypeptide 2	PPZ09743A
B06	Dr.133393	XM_005158655	daam1a	Dishevelled associated activator of morphogenesis 1a	PPZ09350A
B07	Dr.79878	NM_205757	dab2	Disabled homolog 2 (Drosophila)	PPZ04583A
B08	Dr.117628	NM_001281800	dkk1a	Dickkopf 1a	PPZ15298A
B09	Dr.81804	NM_001089545	dkk3b	Dickkopf homolog 3 (Xenopus laevis)	PPZ16390A
B10	Dr.120498	XM_693275	dvl1a	Dishevelled, dsh homolog 1a (Drosophila)	PPZ12782A
B11	Dr.83182	NM_212648	dvl2	Dishevelled, dsh homolog 2 (Drosophila)	PPZ01604A
B12	Dr.156027	XM_009306693	ep300a	E1A binding protein p300 a	PPZ09868A
C01	Dr.78612	NM_201310	fbxw11a	F-box and WD-40 domain protein 11a	PPZ02258A
C02	Dr.79594	NM_131635	fgf4	Fibroblast growth factor 4	PPZ12912A
C03	Dr.84030	NM_001161552	fosl1a	FOS-like antigen 1	PPZ11245A
C04	Dr.81280	NM_130943	frzb	Frizzled-related protein	PPZ00036A
C05	Dr.148362	NM_001130614	fzd1	Zgc:194761	PPZ09337A
C06	Dr.12607	NM_131140	fzd2	Frizzled homolog 2	PPZ00206A
C07	Dr.81883	NM_001042761	fzd3a	Frizzled homolog 3a	PPZ11705A
C08	Dr.78384	XM_005173425	fzd4	Frizzled homolog 4	PPZ24733A
C09	Dr.81286	NM_131134	fzd5	Frizzled homolog 5	PPZ00203A
C10	Dr.121084	NM_200561	fzd6	Frizzled homolog 6 (Drosophila)	PPZ03690A
C11	Dr.4823	NM_131139	fzd7a	Frizzled homolog 7a	PPZ00205A
C12	Dr.32845	NM_130918	fzd8a	Frizzled homolog 8a	PPZ00581A
D01	N/A	XM_003198686	fzd9a	Frizzled homolog 9 (Drosophila)	PPZ09349A
D02	Dr.82778	NM_001044921	gsk3aa	Si:ch211-39e15.2	PPZ10110A
D03	Dr.107139	NM_131381	gsk3b	Glycogen synthase kinase 3 beta	PPZ00419A
D04	Dr.1064	NM_199987	jun	Jun proto-oncogene	PPZ02483A
D05	Dr.107566	NM_001114917	kremen1	Si:dkcyp-7c9.1	PPZ16689A
D06	Dr.64686	NM_131426	lef1	Lymphocyte enhancer binding factor 1	PPZ00459A
D07	Dr.105028	NM_001177458	lrp5	Low density lipoprotein receptor-related protein 5	PPZ12422A
D08	Dr.88486	NM_001134684	lrp6	Low-density lipoprotein receptor-related protein 6	PPZ15750A
D09	Dr.149022	NM_001110389	mapk8a	Mitogen-activated protein kinase 8a	PPZ10818A

Position	UniGene	GenBank	Symbol	Description	Assay
D10	Dr.16634	NM_200686	mtfp1	Zgc:63910	PPZ03802A
D11	Dr.89033	NM_001123252	mtss1	Metastasis suppressor 1	PPZ10097A
D12	Dr.1	NM_131412	myca	Myelocytomatosis oncogene a	PPZ00447A
E01	N/A	XM_002662791	nav2	Neuron navigator 2	PPZ17460A
E02	Dr.89152	NM_001045159	nfatc1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1	PPZ12366A
E03	Dr.135817	NM_001043333	nkd1	Naked cuticle homolog 1 (Drosophila)	PPZ13820A
E04	Dr.150532	NM_212956	nlk1	Nemo like kinase, type 1	PPZ04763A
E05	Dr.81292	NM_130975	pitx2	Paired-like homeodomain transcription factor 2	PPZ00065A
E06	Dr.148309	NM_001126481	porcn	Novel protein similar to vertebrate porcupine homolog	PPZ20989A
E07	Dr.77171	XM_005168286	pparda	Peroxisome proliferator-activated receptor delta a	PPZ00500A
E08	Dr.24985	NM_183342	prickle1a	Prickle-like 1 (Drosophila) a	PPZ02886A
E09	Dr.84227	NM_001163988	prmt6	Protein arginine methyltransferase 6	PPZ06507A
E10	Dr.112566	NM_001113637	pygo1	Pygopus homolog 1 (Drosophila)	PPZ15112A
E11	Dr.32765	NM_213137	rhoaa	Ras homolog gene family, member Aa	PPZ04916A
E12	Dr.77619	NM_173835	ruvbl1	RuvB-like 1 (E. coli)	PPZ01182A
F01	Dr.105557	NM_205585	sfrp1a	Secreted frizzled-related protein 1a	PPZ04349A
F02	Dr.72345	NM_001082837	skp2	S-phase kinase-associated protein 2 (p45)	PPZ11090A
F03	Dr.81308	NM_131287	sox17	SRY-box containing gene 17	PPZ00337A
F04	Dr.134827	NM_001012389	tcf7	Transcription factor 7 (T-cell specific, HMG-box)	PPZ07205A
F05	Dr.79155	NM_131269	tcf7l1a	Transcription factor 7-like 1a (T-cell specific, HMG-box)	PPZ00320A
F06	Dr.91583	NM_153674	vangl2	Vang-like 2 (van gogh, Drosophila)	PPZ01038A
F07	Dr.3690	NM_131229	wif1	Wnt inhibitory factor 1	PPZ00283A
F08	Dr.149255	NM_001166230	wisp1a	WNT1 inducible signaling pathway protein 1a	PPZ10245A
F09	Dr.85371	NM_001201398	wnt1	Wingless-type MMTV integration site family, member 1	PPZ00044A
F10	Dr.342	NM_130980	wnt10a	Wingless-type MMTV integration site family, member 10a	PPZ00070A
F11	Dr.75830	NM_001144804	wnt11	Wingless-type MMTV integration site family, member 11	PPZ14456A
F12	Dr.87285	NM_001100046	wnt16	Wingless-type MMTV integration site family, member 16	PPZ14450A
G01	Dr.378	NM_130950	wnt2	Wingless-type MMTV integration site family member 2	PPZ00043A
G02	Dr.88309	NM_182876	wnt2ba	Wingless-type MMTV integration site family, member 2Ba	PPZ02833A
G03	Dr.143523	NM_001114552	wnt3	Wingless-type MMTV integration site family, member 3	PPZ12673A
G04	Dr.92208	NM_001007185	wnt3a	Wingless-type MMTV integration site family, member 3A	PPZ00654A
G05	Dr.385	NM_001040387	wnt4a	Wingless-type MMTV integration site family, member 4a	PPZ00040A
G06	Dr.108590	NM_001079834	wnt5a	Wingless-type MMTV integration site family, member 5a	PPZ12333A
G07	Dr.389	NM_130937	wnt5b	Wingless-type MMTV integration site family, member 5b	PPZ00029A
G08	N/A	XM_003199189	wnt6b	Novel protein similar to vertebrate wingless-type MMTV integration site family, member 6 (WNT6)	PPZ18437A
G09	Dr.40153	NM_001025540	wnt7aa	Wingless-type MMTV integration site family, member 7Aa	PPZ11644A
G10	N/A	XM_686786	wnt7ba	Wingless-type MMTV integration site family, member 7Ba	PPZ11018A
G11	Dr.309	NM_130946	wnt8a	Wingless-type MMTV integration site family, member 8a	PPZ00039A
G12	Dr.92789	NM_001045363	wnt9a	Wingless-type MMTV integration site family, member 9A	PPZ13847A
H01	Dr.47173	NM_214784	acta1b	Actin, alpha 1b, skeletal muscle	PPZ05295A
H02	Dr.51646	NM_001159768	b2m	Beta-2-microglobulin	PPZ00226A
H03	Dr.77915	NM_212986	hprt1	Hypoxanthine phosphoribosyltransferase 1	PPZ04796A
H04	Dr.150274	NM_201579	nono	Non-POU domain containing, octamer-binding	PPZ01381A
H05	Dr.32450	NM_212784	rpl13a	Ribosomal protein L13a	PPZ10281A
H06	N/A zebrafish	SA_00143	ZGDC	Zebrafish Genomic DNA Contamination	PPZ24726A
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.

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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