RT² Profiler PCR Array (Rotor-Gene® Format)

Zebrafish Cardiovascular Disease

Cat. no. 330231 PAZF-174ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Zebrafish Cardiovascular Disease RT2 Profiler PCR Array profiles the expression of 84 genes linked to cardiac disease. Cardiovascular disease is the most important cause of morbidity and mortality in developed countries, causing twice as many deaths as cancer in the United States. Multiple genetic and environmental factors, as well as the interactions between them, increase the risk for developing major cardiovascular diseases such as coronary artery disease (CAD), myocardial infarction (MI), and congestive heart failure (CHF), to name a few. The underlying pathogenic mechanisms for these disorders are still largely unknown, but observed gene expression changes may play a central role in the development and progression of cardiovascular disease. Microarray studies have characterized gene expression patterns in diseased and non-diseased patients leading to the identification of unique subsets of genes associated with the cardiac disease process. The genes profiled with this array play roles in molecular processes such as apoptosis, cardiac remodeling, cell cycle, cell growth, stress and immune responses, transcriptional regulation, and signal transduction. Genes encoding sarcomere structural proteins are represented as well. A set of controls present on each array enables data analysis using the ΔΔCT method of relative quantification and 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 related to cardiovascular disease with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² 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 RT² 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: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
1	Dr.4864	XM_689244	ace	Si:ch211-124e16.1
2	Dr.75118	NM_001017750	acta1a	Actin, alpha 1a, skeletal muscle
3	Dr.80021	NM_001037573	actn2b	Actinin, alpha 2
4	N/A	XM_001338902	adra1a	Alpha-1A adrenergic receptor-like
5	Dr.149623	XM_001921978	adra1ba	Alpha-1B adrenergic receptor-like
6	N/A	XM_691951	adra1d	Alpha-1D adrenergic receptor-like
7	Dr.81721	NM_001128689	adrb1	Adrenergic receptor, beta 1
8	Dr.88172	NM_001102652	adrb2a	Adrenergic receptor, beta 2a
9	Dr.91316	NM_001128335	adrb3a	Adrenergic receptor, beta 3a
10	N/A	XM_001920851	aebp1	Adipocyte enhancer-binding protein 1-like
11	N/A	XM_005163375	agtr1a	Angiotensin II receptor, type 1a
12	Dr.76727	NM_181764	anxa4	Annexin A4
13	Dr.75914	NM_001083123	ar	Androgen receptor
14	Dr.16838	NM_200965	atp2a2a	ATPase, Ca++ transporting, cardiac muscle, slow twitch 2a
15	Dr.76755	NM_001030277	atp2a2b	ATPase, Ca++ transporting, cardiac muscle, slow twitch 2b
16	Dr.76050	NM_001077355	atp5a1	ATP synthase, H+ transporting, mitochondrial F1 complex, alpha subunit 1, cardiac muscle
17	Dr.16392	NM_200638	c6	Complement component 6
18	Dr.75056	NM_131025	ccnd1	Cyclin D1
19	Dr.75267	NM_212792	cdkn1bb	Cyclin-dependent kinase inhibitor 1Bb
20	Dr.43805	NM_001199190	cfh	Complement factor H
21	Dr.3536	NM_001083844	col11a1a	Collagen, type XI, alpha 1a
22	Dr.20097	NM_199214	col1a1a	Collagen, type I, alpha 1a
23	N/A	XM_009292269	creb5b	Cyclic AMP-responsive element-binding protein 5-like
24	Dr.20584	XM_005171403	crema	Si:dkey-177e13.4
25	Dr.81303	NM_131157	cryaba	Crystallin, alpha B, a
26	Dr.80498	NM_001002670	cryabb	Crystallin, alpha B, b
27	Dr.42794	NM_001015041	ctgfa	Connective tissue growth factor
28	Dr.75809	NM_131038	cx43	Connexin 43
29	Dr.99352	NM_178307	cxcl12a	Chemokine (C-X-C motif) ligand 12a (stromal cell-derived factor 1)
30	Dr.27045	NM_198068	cxcl12b	Chemokine (C-X-C motif) ligand 12b (stromal cell-derived factor 1)
31	Dr.76351	NM_131697	dcn	Decorin
32	Dr.4495	NM_131785	dmd	Dystrophin
33	Dr.16301	NM_194380	dusp6	Dual specificity phosphatase 6
34	Dr.14149	NM_001013521	enah	Enabled homolog (Drosophila)
35	Dr.52413	NM_001043334	epor	Erythropoietin receptor
36	Dr.111178	NM_001114846	f2r	Coagulation factor II (thrombin) receptor
37	Dr.51894	NM_131520	fn1a	Fibronectin 1
38	Dr.81280	NM_130943	frzb	Frizzled-related protein

Position	UniGene	GenBank	Symbol	Description
39	Dr.85087	NM_001128743	g0s2	Zgc:194314
40	Dr.79394	NM_201215	hmgcl	3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase (hydroxymethylglutaricaciduria)
41	Dr.159499	NM_001079977	hmgcra	3-hydroxy-3-methylglutaryl-Coenzyme A reductase a
42	Dr.104496	NM_001142543	hmgn2	High-mobility group nucleosomal binding domain 2
43	N/A	XM_691888	klhl3	Kelch-like 3 (Drosophila)
44	Dr.77508	NM_212827	mao	Monoamine oxidase
45	Dr.77506	NM_001114317	map2k5	Mitogen-activated protein kinase kinase 5
46	Dr.10452	NM_182888	mapk1	Mitogen-activated protein kinase 1
47	Dr.82505	NM_131721	mapk8b	Mitogen-activated protein kinase 8b
48	Dr.81475	NM_201503	mmp13a	Matrix metalloproteinase 13a
49	Dr.82489	NM_201109	msi2b	Musashi homolog 2b (Drosophila)
50	Dr.121290	NM_001131053	mt2	Metallothionein 2
51	Dr.159545	XM_005165720	myh10	Myosin, heavy chain 10, non-muscle
52	Dr.29034	NM_198823	myh6	Myosin, heavy polypeptide 6, cardiac muscle, alpha
53	Dr.76451	NM_001105596	ndufb5	NADH dehydrogenase (ubiquinone) 1 beta subcomplex 5
54	Dr.88774	NM_001013571	nebl	Zgc:113144
55	Dr.76550	NM_001079962	nfia	Nuclear factor I/A
56	Dr.271	NM_131421	nkx2.5	NK2 transcription factor related 5
57	Dr.72101	NM_198800	nppa	Natriuretic peptide precursor A
58	Dr.91651	XM_002663224	nppb	Brain natriuretic peptide-like
59	Dr.67958	NM_001044937	npr1a	Natriuretic peptide receptor 1a
60	N/A	XM_009301825	npr2	Natriuretic peptide receptor 2
61	Dr.83991	NM_001102673	npr3	Natriuretic peptide receptor C/guanylate cyclase C (atrionatriuretic peptide receptor C)
62	Dr.132249	NM_001020711	nr3c1	Nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)
63	Dr.95279	NM_001100403	nr3c2	Nuclear receptor subfamily 3, group C, member 2
64	N/A	XM_009299994	pde3a	Si:dkey-48h7.2
65	N/A	XM_686791	pde3b	Phosphodiesterase 3B, cGMP-inhibited
66	Dr.91637	NM_001123260	pde5ab	Phosphodiesterase 5A, cGMP-specific, b
67	Dr.52540	NM_001168263	pde7a	Phosphodiesterase 7A-like
68	Dr.134176	NM_001006011	phlda1	Pleckstrin homology-like domain, family A, member 1
69	Dr.30157	NM_001077786	postnb	Periostin, osteoblast specific factor
70	Dr.88108	NM_001003981	ptn	Pleiotrophin
71	Dr.78467	NM_001004550	rassf1	Ras association (RalGDS/AF-6) domain family 1
72	Dr.88880	NM_212860	ren	Renin
73	Dr.80392	NM_199798	rrad	Ras-related associated with diabetes
74	Dr.121711	NM_001004555	rtn4a	Reticulon 4a
75	Dr.13960	NM_001089351	s100a1	S100 calcium binding protein A1
76	Dr.156611	XM_009293403	slc12a1	Solute carrier family 12 member 1-like
77	N/A	XM_009307660	spock1	Testican-1-like
78	Dr.143657	NM_131480	stat1a	Signal transduction and activation of transcription 1a

Position	UniGene	GenBank	Symbol	Description
79	Dr.153729	XM_009301658	tcf4	Transcription factor 4
80	N/A	XM_009307490	thbs2	Thrombospondin-2-like
81	Dr.14260	NM_152893	tnnt2a	Troponin T2a, cardiac
82	Dr.82679	NM_153667	tpi1a	Triosephosphate isomerase 1a
83	Dr.79558	NM_199635	zbtb16a	Zinc finger and BTB domain containing 16a
84	Dr.74640	NM_001109824	zyx	Zgc:171680
85	Dr.47173	NM_214784	acta1b	Actin, alpha 1b, skeletal muscle
86	Dr.51646	NM_001159768	b2m	Beta-2-microglobulin
87	Dr.77915	NM_212986	hprt1	Hypoxanthine phosphoribosyltransferase 1
88	Dr.150274	NM_201579	nono	Non-POU domain containing, octamer-binding
89	Dr.32450	NM_212784	rpl13a	Ribosomal protein L13a
90	N/A zebrafish	SA_00143	ZGDC	Zebrafish Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green ROX™ 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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