

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Mouse Skeletal Muscle: Myogenesis & Myopathy

Cat. no. 330231 PAMM-099ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² 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 ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Description

The Mouse Skeletal Muscle Development & Disease RT² Profiler PCR Array profiles the expression of 84 key genes involved in skeletal muscle differentiation, function and disease-related processes. Skeletal muscle's role in voluntary movement contributes greatly to energy metabolism and its regulation via glucose uptake and storage by insulin. Complications from aging and metabolic diseases like diabetes and metabolic syndrome contribute to muscle wasting (atrophy). However, recent research hypothesizes that metabolic defects in skeletal muscle contribute to the etiology of diabetes and metabolic syndrome, suggesting that skeletal muscle has a larger role in these disease states than initially expected. Large heterogeneous protein complexes including titin or dystrophin facilitate muscle contraction by connecting the skeletal muscle cytoskeleton to the extracellular matrix. Muscular dystrophies arise from inherited mutations in the genes encoding components of these complexes, and gene expression changes disrupting their normal contractile function dysregulate signaling pathways that control muscle growth. Potential therapies for muscle wasting include generation of new muscle cells (myogenesis) or increasing the mass of current muscle cells (hypertrophy). Thus, muscle-specific biological and pathophysiological processes are interrelated and cannot be studied in isolation. This array includes genes important for basic skeletal muscle function, development and growth, as well as genes related to the disease processes of metabolic syndrome and muscle wasting. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in skeletal muscle development and disease with this array.

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

Shipping and storage

RT² 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. RT² 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 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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Acta1	Actn3	Acvr2b	Adipoq	Adrb2	Agrrn	Akt1	Akt2	Alp2a1	Bcl2	Bmp4	Camk2g
B	Capn2	Capn3	Casp3	Cast	Cav1	Cav3	Cryab	Cs	Ctnnb1	Dag1	Des	Dmd
C	Dmpk	Dysf	Fbxo32	Fgf2	Foxo1	Foxo3	Hdac5	Hk2	Igf1	Igf2	Igfbp3	Igfbp5
D	Ikbb	Il1b	Il6	Lep	Lmna	Mapk1	Mapk14	Mapk3	Mapk8	Mb	Mef2c	Mmp9
E	Mstn	Musk	Myf5	Myf6	Myh1	Myh2	Myod1	Myog	Myot	Neb	Nkx1	Nos2
F	Pax3	Pax7	Pdk4	Pparg	Ppargc1a	Ppargc1b	Ppp3ca	Prkaa1	Prkab2	Prkag1	Prkag3	Rhoa
G	Rps6kb1	Sgca	Slc2a4	Tgfb1	Tnfr	Tnnc1	Tnni2	Tnnt1	Tnnt3	Trim63	Ttn	Utrn
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.214950	NM_009606	Acta1	Actin, alpha 1, skeletal muscle
A02	Mm.5316	NM_013456	Actn3	Actinin alpha 3
A03	Mm.390239	NM_007397	Acvr2b	Activin receptor IIB
A04	Mm.3969	NM_009605	Adipoq	Adiponectin, C1Q and collagen domain containing
A05	Mm.5598	NM_007420	Adrb2	Adrenergic receptor, beta 2
A06	Mm.273098	NM_021604	Agrrn	Agrrin
A07	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A08	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A09	Mm.35134	NM_007504	Alp2a1	ATPase, Ca++ transporting, cardiac muscle, fast twitch 1
A10	Mm.257460	NM_009741	Bcl2	B-cell leukemia/lymphoma 2
A11	Mm.6813	NM_007554	Bmp4	Bone morphogenetic protein 4
A12	Mm.235182	NM_178597	Camk2g	Calcium/calmodulin-dependent protein kinase II gamma
B01	Mm.19306	NM_009794	Capn2	Calpain 2
B02	Mm.458021	NM_007601	Capn3	Calpain 3
B03	Mm.34405	NM_009810	Casp3	Caspase 3
B04	Mm.29163	NM_009817	Cast	Calpastatin
B05	Mm.28278	NM_007616	Cav1	Caveolin 1, caveolae protein
B06	Mm.3924	NM_007617	Cav3	Caveolin 3
B07	Mm.178	NM_009964	Cryab	Crystallin, alpha B
B08	Mm.58836	NM_026444	Cs	Citrate synthase
B09	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
B10	Mm.7524	NM_010017	Dag1	Dystroglycan 1
B11	Mm.6712	NM_010043	Des	Desmin
B12	Mm.275608	NM_007868	Dmd	Dystrophin, muscular dystrophy
C01	Mm.6529	NM_032418	Dmpk	Dystrophin myotonic-protein kinase
C02	Mm.220982	NM_021469	Dysf	Dysferlin
C03	Mm.292042	NM_026346	Fbxo32	F-box protein 32
C04	Mm.473689	NM_008006	Fgf2	Fibroblast growth factor 2
C05	Mm.29891	NM_019739	Foxo1	Forkhead box O1
C06	Mm.338613	NM_019740	Foxo3	Forkhead box O3
C07	Mm.22665	NM_010412	Hdac5	Histone deacetylase 5
C08	Mm.255848	NM_013820	Hk2	Hexokinase 2
C09	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
C10	Mm.3862	NM_010514	Igf2	Insulin-like growth factor 2
C11	Mm.29254	NM_008343	Igfbp3	Insulin-like growth factor binding protein 3
C12	Mm.405761	NM_010518	Igfbp5	Insulin-like growth factor binding protein 5
D01	Mm.277886	NM_010546	Ikbb	Inhibitor of kappaB kinase beta
D02	Mm.222830	NM_008361	Il1b	Interleukin 1 beta
D03	Mm.1019	NM_031168	Il6	Interleukin 6
D04	Mm.277072	NM_008493	Lep	Leptin
D05	Mm.243014	NM_019390	Lmna	Lamin A
D06	Mm.196581	NM_011949	Mapk1	Mitogen-activated protein kinase 1
D07	Mm.311337	NM_011951	Mapk14	Mitogen-activated protein kinase 14
D08	Mm.8385	NM_011952	Mapk3	Mitogen-activated protein kinase 3
D09	Mm.21495	NM_016700	Mapk8	Mitogen-activated protein kinase 8

Position	UniGene	GenBank	Symbol	Description
D10	Mm.404074	NM_013593	Mb	Myoglobin
D11	Mm.24001	NM_025282	Mef2c	Myocyte enhancer factor 2C
D12	Mm.4406	NM_013599	Mmp9	Matrix metalloproteinase 9
E01	Mm.3514	NM_010834	Mstn	Myostatin
E02	Mm.16148	NM_010944	Musk	Muscle, skeletal, receptor tyrosine kinase
E03	Mm.4984	NM_008656	Myf5	Myogenic factor 5
E04	Mm.11	NM_008657	Myf6	Myogenic factor 6
E05	Mm.477065	NM_030679	Myh1	Myosin, heavy polypeptide 1, skeletal muscle, adult
E06	Mm.425679	NM_001039545	Myh2	Myosin, heavy polypeptide 2, skeletal muscle, adult
E07	Mm.1526	NM_010866	Myod1	Myogenic differentiation 1
E08	Mm.16528	NM_031189	Myog	Myogenin
E09	Mm.143804	NM_001033621	Myot	Myotilin
E10	Mm.389247	NM_010889	Neb	Nebulin
E11	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1, p105
E12	Mm.2893	NM_010927	Nos2	Nitric oxide synthase 2, inducible
F01	Mm.1371	NM_008781	Pax3	Paired box gene 3
F02	Mm.218760	NM_011039	Pax7	Paired box gene 7
F03	Mm.235547	NM_013743	Pdk4	Pyruvate dehydrogenase kinase, isoenzyme 4
F04	Mm.3020	NM_011146	Pparg	Peroxisome proliferator activated receptor gamma
F05	Mm.259072	NM_008904	Ppargc1a	Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha
F06	Mm.415302	NM_133249	Ppargc1b	Peroxisome proliferative activated receptor, gamma, coactivator 1 beta
F07	Mm.331389	NM_008913	Ppp3ca	Protein phosphatase 3, catalytic subunit, alpha isoform
F08	Mm.207004	NM_001013367	Prkaa1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
F09	Mm.31175	NM_182997	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
F10	Mm.6670	NM_016781	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
F11	Mm.166501	NM_153744	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit
F12	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
G01	Mm.394280	NM_028259	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
G02	Mm.18709	NM_009161	Sgca	Sarcoglycan, alpha (dystrophin-associated glycoprotein)
G03	Mm.10661	NM_009204	Slc2a4	Solute carrier family 2 (facilitated glucose transporter), member 4
G04	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G05	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G06	Mm.439921	NM_009393	Tnnc1	Troponin C, cardiac/slow skeletal
G07	Mm.39469	NM_009405	Tnni2	Troponin I, skeletal, fast 2
G08	Mm.358643	NM_011618	Tnnt1	Troponin T1, skeletal, slow
G09	Mm.389992	NM_011620	Tnnt3	Troponin T3, skeletal, fast
G10	Mm.331961	NM_001039048	Trim63	Tripartite motif-containing 63
G11	Mm.373672	NM_011652	Titin	Titin
G12	Mm.331784	NM_011682	Utrn	Utrophin
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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, 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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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 ² 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 ² 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.

RT² 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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