

RT² Profiler PCR Array (Rotor-Gene® Format)

Pig Skeletal Muscle: Myogenesis & Myopathy

Cat. no. 330231 PASS-099ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Pig Skeletal Muscle: Myogenesis & Myopathy 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 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 cyclers (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	Ssc.37707	NM_001167795	ACTA1	Actin, alpha 1, skeletal muscle
2	N/A	XM_003122492	ACTN3	Alpha-actinin-3
3	Ssc.42773	NM_001005350	ACVR2B	Activin A receptor, type IIB
4	Ssc.18549	NM_214370	ADIPOQ	Adiponectin, C1Q and collagen domain containing
5	Ssc.16077	NM_001128436	ADRB2	Adrenergic, beta-2-, receptor, surface
6	N/A	XM_013995626	AGRN	Agrin
7	Ssc.19672	NM_001159776	AKT1	V-akt murine thymoma viral oncogene homolog 1
8	Ssc.43170	NM_001256779	AKT2	V-akt murine thymoma viral oncogene homolog 2
9	Ssc.55270	NM_001204393	ATP2A1	ATPase, Ca ⁺⁺ transporting, cardiac muscle, fast twitch 1
10	Ssc.53633	XM_003121700	BCL2	B-cell CLL/lymphoma 2
11	Ssc.16690	NM_001101031	BMP4	Bone morphogenetic protein 4
12	Ssc.49878	NM_214193	CAMK2G	Calcium/calmodulin-dependent protein kinase II gamma
13	Ssc.49836	NM_001100188	CAPN2	Calpain 2, (m/II) large subunit
14	Ssc.16057	NM_214171	CAPN3	Calpain 3
15	Ssc.15886	NM_214131	CASP3	Caspase 3, apoptosis-related cysteine peptidase
16	Ssc.31703	NM_214067	CAST	Calpastatin
17	Ssc.12842	NM_214438	CAV1	Caveolin 1, caveolae protein, 22kDa
18	Ssc.45473	NM_001037149	CAV3	Caveolin 3
19	N/A	XM_003357294	CRYAB	Crystallin, alpha B
20	Ssc.16315	NM_214276	CS	Citrate synthase
21	Ssc.25839	NM_214367	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
22	N/A	XM_013986645	DAG1	Dystroglycan
23	Ssc.24	NM_001001535	DES	Desmin
24	Ssc.42754	NM_001012408	DMD	Dystrophin
25	Ssc.29148	XM_013992285	DMPK	Dystrophia myotonica-protein kinase
26	Ssc.101547	XM_013996038	DYSF	Dysferlin
27	Ssc.4368	NM_001044588	FBXO32	F-box protein 32
28	Ssc.17772	XM_013978917	FGF2	Fibroblast growth factor 2 (basic)
29	Ssc.73	NM_214014	FOXO1	Forkhead box O1
30	Ssc.42672	NM_001135959	FOXO3	Forkhead box O3
31	Ssc.4125	XM_013980921	HDAC5	Histone deacetylase 5
32	Ssc.42680	NM_001122987	HK2	Hexokinase 2
33	Ssc.16231	NM_214256	IGF1	Insulin-like growth factor 1 (somatomedin C)
34	Ssc.9365	NM_213883	IGF2	Insulin-like growth factor 2 (somatomedin A)
35	Ssc.42774	NM_001005156	IGFBP3	Insulin-like growth factor binding protein 3
36	Ssc.94196	NM_214099	IGFBP5	Insulin-like growth factor binding protein 5
37	Ssc.31350	NM_001099935	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
38	Ssc.28829	NM_214055	IL1B	Interleukin 1 beta

Position	UniGene	GenBank	Symbol	Description
39	Ssc.62	NM_214399	IL6	Interleukin 6 (interferon, beta 2)
40	Ssc.265	NM_213840	LEP	Leptin
41	Ssc.944	NM_001111257	LMNA	Lamin A/C
42	Ssc.72142	NM_001198922	MAPK1	Extracellular signal-regulated kinase-2
43	Ssc.11018	XM_001929490	MAPK14	Mitogen-activated protein kinase 14
44	Ssc.5924	XM_013991188	MAPK3	Mitogen-activated protein kinase 3
45	Ssc.83372	XM_003359272	MAPK8	Mitogen-activated protein kinase 8
46	Ssc.715	NM_214236	MB	Myoglobin
47	Ssc.34788	NM_001044540	MEF2C	Myocyte enhancer factor 2C
48	Ssc.4086	NM_001038004	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
49	Ssc.23498	NM_214435	MSTN	Myostatin
50	N/A	XM_013993747	MUSK	Muscle, skeletal receptor tyrosine-protein kinase
51	Ssc.27397	NM_001278775	MYF5	Myogenic factor 5
52	Ssc.16626	NM_001244672	MYF6	Myogenic factor 6 (herculin)
53	Ssc.15909	NM_001104951	MYH1	Myosin, heavy chain 1, skeletal muscle, adult
54	Ssc.84856	NM_214136	MYH2	Myosin, heavy chain 2, skeletal muscle, adult
55	Ssc.22906	NM_001002824	MYOD1	Myogenic differentiation 1
56	Ssc.42756	NM_001012406	MYOG	Myogenin (myogenic factor 4)
57	Ssc.50438	NM_001099941	MYOT	Myotilin
58	Ssc.93211	XM_013990615	NEB	Nebulin-like
59	Ssc.17816	NM_001048232	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
60	Ssc.16117	NM_001143690	NOS2	Nitric oxide synthase 2, inducible
61	Ssc.27600	XM_013986841	PAX3	Paired box protein Pax-3
62	N/A	XM_013991732	PAX7	Paired box protein Pax-7-like
63	Ssc.1121	NM_001159306	PDK4	Pyruvate dehydrogenase kinase, isozyme 4
64	Ssc.14475	NM_214379	PPARG	Peroxisome proliferator-activated receptor gamma
65	Ssc.16864	NM_213963	PPARGC1A	Peroxisome proliferator activated receptor gamma, coactivator 1 alpha
66	Ssc.78540	XM_013995328	PPARGC1B	Peroxisome proliferator-activated receptor gamma, coactivator 1 beta
67	Ssc.94720	NM_214128	PPP3CA	Protein phosphatase 3, catalytic subunit, alpha isozyme
68	Ssc.26892	NM_001167633	PRKAA1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
69	Ssc.23789	NM_001243683	PRKAB2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
70	Ssc.26338	NM_001001642	PRKAG1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
71	Ssc.287	NM_214077	PRKAG3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit
72	Ssc.7096	NM_001244437	RHOA	Ras homolog family member A
73	Ssc.22127	XM_003131671	RPS6KB1	Ribosomal protein S6 kinase, 70kDa, polypeptide 1
74	Ssc.48089	NM_001144122	SGCA	Sarcoglycan, alpha (50kDa dystrophin-associated glycoprotein)
75	Ssc.15984	NM_001128433	SLC2A4	Solute carrier family 2 (facilitated glucose transporter), member 4
76	Ssc.76	NM_214015	TGFB1	Transforming growth factor, beta 1
77	Ssc.100	NM_214022	TNF	Tumor necrosis factor
78	Ssc.3085	NM_001130243	TNNC1	Troponin C type 1 (slow)

Position	UniGene	GenBank	Symbol	Description
79	<i>Ssc.56814</i>	NM_001032359	TNNI2	Troponin I type 2 (skeletal, fast)
80	<i>Ssc.7535</i>	NM_213748	TNNT1	Troponin T type 1 (skeletal, slow)
81	<i>Ssc.18535</i>	NM_001001863	TNNT3	Troponin T type 3 (skeletal, fast)
82	<i>Ssc.61531</i>	NM_001184756	TRIM63	Tripartite motif containing 63
83	<i>Ssc.19448</i>	XM_005657567	TTN	Titin-like
84	N/A	XM_005659165	UTRN	Utrophin
85	<i>Ssc.10316</i>	XM_003124280	ACTB	Actin, beta
86	<i>Ssc.73773</i>	NM_213978	B2M	Beta-2-microglobulin
87	<i>Ssc.16135</i>	NM_001206359	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
88	<i>Ssc.4158</i>	NM_001032376	HPRT1	Hypoxanthine phosphoribosyltransferase 1
89	<i>Ssc.27927</i>	NM_001244068	RPL13A	Ribosomal protein L13a
90	N/A	SA_00133	SGDC	Pig 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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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.

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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