RT² Profiler PCR Array (Rotor-Gene® Format)

Mouse Cellular Senescence

Cat. no. 330231 PAMM-050ZR

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 Mouse Cellular Senescence RT² Profiler PCR Array profiles the expression of 84 key genes involved in the initiation and progression of the biological process causing cells to lose the ability to divide. Senescent cells acquire a large and flat cellular appearance, decrease contacts with other cells, and increase adhesion to the extracellular matrix. Molecularly, the cellular senescence program activates p53 and pRb signaling leading to withdrawal from the cell cycle. In normal replicative senescence, the cell simply enters senescence after a certain number of replications. However, stress-induced senescence causes cells to initiate senescence prematurely due to a variety of stresses, including DNA damage, oxidative stress, interferon-related responses, and signaling via either insulin growth factors (IGF) or mitogen activated protein kinases (MAPK). In fact, some hypothesize that the senescence program originally evolved as an antiviral mechanism. Due to cellular senescence activation in early stage cancers and its dysregulation in late stage cancers, understanding the process and controlling it holds therapeutic promise. This burgeoning field may also yield other important clues about the cellular biology of aging. This array includes genes involved in the primary senescence program and known stresses that cause premature senescence. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in cellular senescence with this array.

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

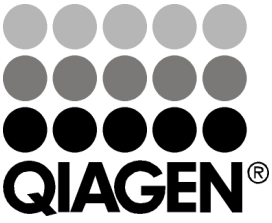
Shipping and storage

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
A01	Mm.1318	NM_009594	Abl1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A03	Mm.140988	NM_053080	Aldh1a3	Aldehyde dehydrogenase family 1, subfamily A3
A04	Mm.5088	NM_007499	Atm	Ataxia telangiectasia mutated homolog (human)
A05	Mm.289584	NM_007552	Bmi1	Bmi1 polycomb ring finger oncogene
A06	Mm.1971	NM_007591	Calr	Calreticulin
A07	Mm.4189	NM_009828	Ccna2	Cyclin A2
A08	Mm.260114	NM_172301	Ccnb1	Cyclin B1
A09	Mm.273049	NM_007631	Ccnd1	Cyclin D1
A10	Mm.16110	NM_007633	Ccne1	Cyclin E1
A11	Mm.423621	NM_009851	Cd44	CD44 antigen
A12	Mm.286602	NM_009860	Cdc25c	Cell division cycle 25 homolog C (S. pombe)
B01	Mm.111326	NM_016756	Cdk2	Cyclin-dependent kinase 2
B02	Mm.6839	NM_009870	Cdk4	Cyclin-dependent kinase 4
B03	Mm.31672	NM_009873	Cdk6	Cyclin-dependent kinase 6
B04	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B05	Mm.2958	NM_009875	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B06	Mm.168789	NM_009876	Cdkn1c	Cyclin-dependent kinase inhibitor 1C (P57)
B07	Mm.4733	NM_009877	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B08	Mm.423094	NM_007670	Cdkn2b	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B09	Mm.1912	NM_007671	Cdkn2c	Cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4)
B10	Mm.29020	NM_009878	Cdkn2d	Cyclin-dependent kinase inhibitor 2D (p19, inhibits CDK4)
B11	Mm.16753	NM_007691	Chek1	Checkpoint kinase 1 homolog (S. pombe)
B12	Mm.279308	NM_016681	Chek2	CHK2 checkpoint homolog (S. pombe)
C01	Mm.272321	NM_010828	Cited2	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2
C02	Mm.277735	NM_007742	Col1a1	Collagen, type I, alpha 1
C03	Mm.249555	NM_009930	Col3a1	Collagen, type III, alpha 1
C04	Mm.294885	NM_011804	Creg1	Cellular repressor of E1A-stimulated genes 1
C05	Mm.18036	NM_007891	E2f1	E2F transcription factor 1
C06	Mm.268356	NM_010093	E2f3	E2F transcription factor 3
C07	Mm.181959	NM_007913	Egr1	Early growth response 1
C08	Mm.292415	NM_011808	Ets1	E26 avian leukemia oncogene 1, 5' domain
C09	Mm.290207	NM_011809	Ets2	E26 avian leukemia oncogene 2, 3' domain
C10	Mm.193099	NM_010233	Fn1	Fibronectin 1
C11	Mm.72235	NM_007836	Gadd45a	Growth arrest and DNA-damage-inducible 45 alpha
C12	Mm.290516	NM_009752	Glb1	Galactosidase, beta 1
D01	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
D02	Mm.334313	NM_008284	Hras1	Harvey rat sarcoma virus oncogene 1
D03	Mm.444	NM_010495	Id1	Inhibitor of DNA binding 1
D04	Mm.240327	NM_008337	Ifng	Interferon gamma
D05	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
D06	Mm.275742	NM_010513	Igf1r	Insulin-like growth factor I receptor
D07	Mm.29254	NM_008343	Igfbp3	Insulin-like growth factor binding protein 3
D08	Mm.405761	NM_010518	Igfbp5	Insulin-like growth factor binding protein 5
D09	Mm.233470	NM_008048	Igfbp7	Insulin-like growth factor binding protein 7
D10	Mm.25709	NM_011919	Ing1	Inhibitor of growth family, member 1
D11	Mm.3960	NM_016849	Irf3	Interferon regulatory factor 3
D12	Mm.6479	NM_012057	Irf5	Interferon regulatory factor 5
E01	Mm.3233	NM_016850	Irf7	Interferon regulatory factor 7
E02	Mm.248907	NM_008927	Map2k1	Mitogen-activated protein kinase kinase 1
E03	Mm.18494	NM_008928	Map2k3	Mitogen-activated protein kinase kinase 3
E04	Mm.14487	NM_011943	Map2k6	Mitogen-activated protein kinase kinase 6
E05	Mm.311337	NM_011951	Mapk14	Mitogen-activated protein kinase 14
E06	Mm.22670	NM_010786	Mdm2	Transformed mouse 3T3 cell double minute 2
E07	Mm.287329	NM_001045529	Morc3	Microrchidia 3
E08	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene

Position	UniGene	GenBank	Symbol	Description
E09	Mm.20866	NM_013752	Nbn	Nibrin
E10	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1, p105
E11	Mm.31748	NM_015760	Nox4	NADPH oxidase 4
E12	Mm.7141	NM_011045	Pcna	Proliferating cell nuclear antigen
F01	Mm.260521	NM_008839	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide
F02	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
F03	Mm.2314	NM_011103	Prkcd	Protein kinase C, delta
F04	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
F05	Mm.273862	NM_009029	Rb1	Retinoblastoma 1
F06	Mm.244671	NM_011249	Rbl1	Retinoblastoma-like 1 (p107)
F07	Mm.235580	NM_011250	Rbl2	Retinoblastoma-like 2
F08	Mm.271870	NM_011111	Serpinb2	Serine (or cysteine) peptidase inhibitor, clade B, member 2
F09	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F10	Mm.351459	NM_019812	Sirt1	Sirtuin 1 (silent mating type information regulation 2, homolog) 1 (S. cerevisiae)
F11	Mm.276325	NM_011434	Sod1	Superoxide dismutase 1, soluble
F12	Mm.290876	NM_013671	Sod2	Superoxide dismutase 2, mitochondrial
G01	Mm.291442	NM_009242	Sparc	Secreted acidic cysteine rich glycoprotein
G02	Mm.287052	NM_009324	Tbx2	T-box 2
G03	Mm.219139	NM_011535	Tbx3	T-box 3
G04	Mm.6402	NM_009353	Terf2	Telomeric repeat binding factor 2
G05	Mm.10109	NM_009354	Tert	Telomerase reverse transcriptase
G06	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G07	Mm.3248	NM_009365	Tgfb1i1	Transforming growth factor beta 1 induced transcript 1
G08	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G09	Mm.222	NM_011640	Trp53	Transformation related protein 53
G10	Mm.215389	NM_013735	Trp53bp1	Transformation related protein 53 binding protein 1
G11	Mm.3280	NM_011658	Twist1	Twist homolog 1 (Drosophila)
G12	Mm.268000	NM_011701	Vim	Vimentin
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.
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.

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.

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 or can be requested from QIAGEN Technical Services or your local distributor.

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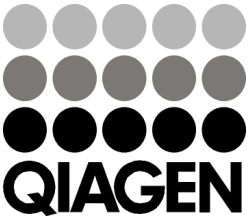

Sample & Assay Technologies