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

Mouse Tight Junctions

Cat. no. 330231 PAMM-143ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

QIAGEN®

Sample & Assay Technologies

Description

The Mouse Tight Junctions RT² Profiler PCR Array profiles the expression of 84 key genes encoding proteins that form impermeable barriers between epithelial cells to regulate polarity, proliferation, and differentiation. Tight junctions seal adjacent epithelial cells together, preventing the passage of most dissolved molecules as well as membrane-bound lipids and proteins between the apical and basolateral surfaces. Tight junctions maintain this separation anywhere epithelial cells form a barrier between the environment and the interior of the mammalian organism or between internal compartments. Some examples include the blood–brain barrier, blood vessels, intestines, nephrons, and skin. Tissue and organ system development requires the correct formation of tight junctions. Normal biological processes, such as immune cell extravasation/diapedesis and intestinal absorption, require the proper assembly, disassembly, and maintenance of tight junctions. Dysregulation of tight junction integrity and function plays a key role in the pathophysiology of diseases such as inflammatory bowel disease and epithelial-to-mesenchymal transition during tumor metastasis. The core components of tight junctions include the claudins, occludin, and other cell adhesion proteins. Their extracellular domains engage in homophilic and/or heterophilic interactions with other cell surface proteins, while their intracellular domains interact with adaptor proteins such as actinins, catenins, and other junction interacting proteins. These adaptors recruit protein kinases that regulate the cytoskeleton via phosphorylation cascades and G-proteins that directly recruit cytoskeleton components to the junction. Profiling the expression of tight junction components may lead to a better understanding of molecular mechanisms behind tight-junction–mediated cell biology. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in tight junctions 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	Actn1	Actn2	Actn3	Actn4	Amotl1	Arhgef2	Ash1l	B230120H23Rik	Cask	Cd99	Cdc42	Cdk4
B	Cgn	Cldn1	Cldn10	Cldn11	Cldn12	Cldn14	Cldn15	Cldn16	Cldn17	Cldn18	Cldn19	Cldn2
C	Cldn3	Cldn4	Cldn5	Cldn6	Cldn7	Cldn8	Cldn9	Crb1	Crb3	Csda	Csnk2a1	Csnk2a2
D	Csnk2b	Ctnna1	Ctnna2	Ctnna3	Ctnnb1	Cttn	Epb4.1	Esam	F11r	Gnai1	Hcls1	Icam1
E	Icam2	Igsf5	Ilk	Inadl	Jam2	Jam3	Llgl1	Llgl2	Magi1	Magi3	Mark2	Mllt4
F	Mpdz	Mpp5	Mpp6	Ocln	Pard3	Pard6a	Pard6b	Pecam1	Prkci	Prkcz	Pten	Rac1
G	Rhoa	Smurf1	Spna1	Spna2	Spnb1	Sympk	Tiam1	Tjap1	Tjp1	Tjp2	Tjp3	Vapa
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.253564	NM_134156	Actn1	Actinin, alpha 1
A02	Mm.37638	NM_033268	Actn2	Actinin alpha 2
A03	Mm.5316	NM_013456	Actn3	Actinin alpha 3
A04	Mm.81144	NM_021895	Actn4	Actinin alpha 4
A05	Mm.159552	NM_001081395	Amotl1	Angiomotin-like 1
A06	Mm.239329	NM_008487	Arhgef2	Rho/rac guanine nucleotide exchange factor (GEF) 2
A07	Mm.130752	NM_138679	Ash1l	Ash1 (absent, small, or homeotic)-like (Drosophila)
A08	Mm.314618	NM_178084	B230120H23 Rik	RIKEN cDNA B230120H23 gene
A09	Mm.327591	NM_009806	Cask	Calcium/calmodulin-dependent serine protein kinase (MAGUK family)
A10	Mm.423040	NM_025584	Cd99	CD99 antigen
A11	Mm.1022	NM_009861	Cdc42	Cell division cycle 42 homolog (S. cerevisiae)
A12	Mm.6839	NM_009870	Cdk4	Cyclin-dependent kinase 4
B01	Mm.87634	NM_001037711	Cgn	Cingulin
B02	Mm.289441	NM_016674	Cldn1	Claudin 1
B03	Mm.87456	NM_021386	Cldn10	Claudin 10
B04	Mm.4425	NM_008770	Cldn11	Claudin 11
B05	Mm.40132	NM_022890	Cldn12	Claudin 12
B06	Mm.328716	NM_019500	Cldn14	Claudin 14
B07	Mm.87202	NM_021719	Cldn15	Claudin 15
B08	Mm.275205	NM_053241	Cldn16	Claudin 16
B09	Mm.126860	NM_181490	Cldn17	Claudin 17
B10	Mm.386784	NM_019815	Cldn18	Claudin 18
B11	Mm.130701	NM_153105	Cldn19	Claudin 19
B12	Mm.117068	NM_016675	Cldn2	Claudin 2
C01	Mm.158662	NM_009902	Cldn3	Claudin 3
C02	Mm.7339	NM_009903	Cldn4	Claudin 4
C03	Mm.22768	NM_013805	Cldn5	Claudin 5
C04	Mm.86421	NM_018777	Cldn6	Claudin 6
C05	Mm.281896	NM_016887	Cldn7	Claudin 7
C06	Mm.25836	NM_018778	Cldn8	Claudin 8
C07	Mm.103738	NM_020293	Cldn9	Claudin 9
C08	Mm.95700	NM_133239	Crb1	Crumbs homolog 1 (Drosophila)
C09	Mm.391027	NM_177638	Crb3	Crumbs homolog 3 (Drosophila)
C10	Mm.458000	NM_011733	Csda	Cold shock domain protein A
C11	Mm.23692	NM_007788	Csnk2a1	Casein kinase 2, alpha 1 polypeptide
C12	Mm.440348	NM_009974	Csnk2a2	Casein kinase 2, alpha prime polypeptide
D01	Mm.378901	NM_009975	Csnk2b	Casein kinase 2, beta polypeptide
D02	Mm.18962	NM_009818	Ctnna1	Catenin (cadherin associated protein), alpha 1
D03	Mm.34637	NM_009819	Ctnna2	Catenin (cadherin associated protein), alpha 2
D04	Mm.444692	NM_177612	Ctnna3	Catenin (cadherin associated protein), alpha 3
D05	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
D06	Mm.205601	NM_007803	Cttn	Cortactin

Position	UniGene	GenBank	Symbol	Description
D07	Mm.30038	NM_183428	Epb4.1	Erythrocyte protein band 4.1
D08	Mm.41751	NM_027102	Esam	Endothelial cell-specific adhesion molecule
D09	Mm.294882	NM_172647	F11r	F11 receptor
D10	Mm.254629	NM_010305	Gnai1	Guanine nucleotide binding protein (G protein), alpha inhibiting 1
D11	Mm.4091	NM_008225	Hcls1	Hematopoietic cell specific Lyn substrate 1
D12	Mm.435508	NM_010493	Icam1	Intercellular adhesion molecule 1
E01	Mm.394	NM_010494	Icam2	Intercellular adhesion molecule 2
E02	Mm.119714	NM_028078	Igsf5	Immunoglobulin superfamily, member 5
E03	Mm.274846	NM_010562	Ilk	Integrin linked kinase
E04	Mm.90218	NM_172696	Inadl	InaD-like (Drosophila)
E05	Mm.41758	NM_023844	Jam2	Junction adhesion molecule 2
E06	Mm.28770	NM_023277	Jam3	Junction adhesion molecule 3
E07	Mm.285453	NM_008502	Llgl1	Lethal giant larvae homolog 1 (Drosophila)
E08	Mm.290450	NM_145438	Llgl2	Lethal giant larvae homolog 2 (Drosophila)
E09	Mm.217216	NM_001029850	Magi1	Membrane associated guanylate kinase, WW and PDZ domain containing 1
E10	Mm.264849	NM_133853	Magi3	Membrane associated guanylate kinase, WW and PDZ domain containing 3
E11	Mm.258986	NM_007928	Mark2	MAP/microtubule affinity-regulating kinase 2
E12	Mm.59167	NM_010806	Mllt4	Myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 4
F01	Mm.153039	NM_010820	Mpdz	Multiple PDZ domain protein
F02	Mm.425777	NM_019579	Mpp5	Membrane protein, palmitoylated 5 (MAGUK p55 subfamily member 5)
F03	Mm.41288	NM_019939	Mpp6	Membrane protein, palmitoylated 6 (MAGUK p55 subfamily member 6)
F04	Mm.4807	NM_008756	Ocln	Occludin
F05	Mm.299254	NM_033620	Pard3	Par-3 (partitioning defective 3) homolog (C. elegans)
F06	Mm.472753	NM_019695	Pard6a	Par-6 (partitioning defective 6,) homolog alpha (C. elegans)
F07	Mm.292834	NM_021409	Pard6b	Par-6 (partitioning defective 6) homolog beta (C. elegans)
F08	Mm.343951	NM_008816	Pecam1	Platelet/endothelial cell adhesion molecule 1
F09	Mm.291554	NM_008857	Prkci	Protein kinase C, iota
F10	Mm.28561	NM_008860	Prkcz	Protein kinase C, zeta
F11	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
F12	Mm.292510	NM_009007	Rac1	RAS-related C3 botulinum substrate 1
G01	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
G02	Mm.27735	NM_029438	Smurf1	SMAD specific E3 ubiquitin protein ligase 1
G03	Mm.200611	NM_011465	Spna1	Spectrin alpha 1
G04	Mm.204969	NM_001076554	Spna2	Spectrin alpha 2
G05	Mm.32881	NM_013675	Spnb1	Spectrin beta 1
G06	Mm.130902	NM_026605	Sympk	Symplekin
G07	Mm.124100	NM_009384	Tiam1	T-cell lymphoma invasion and metastasis 1
G08	Mm.284594	NM_028751	Tjap1	Tight junction associated protein 1
G09	Mm.4342	NM_009386	Tjp1	Tight junction protein 1
G10	Mm.104744	NM_011597	Tjp2	Tight junction protein 2
G11	Mm.27984	NM_013769	Tjp3	Tight junction protein 3
G12	Mm.266767	NM_013933	Vapa	Vesicle-associated membrane protein, associated protein A
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 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
RT² 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
RT² 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

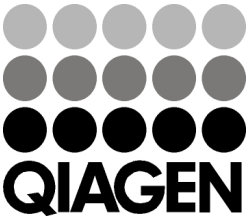
* Larger kit sizes available; please inquire.

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.

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.

www.qiagen.com

Australia ▪ 1-800-243-800
Austria ▪ 0800/281010
Belgium ▪ 0800-79612
Brazil ▪ 0800-557779
Canada ▪ 800-572-9613
China ▪ 8621-3865-3865
Denmark ▪ 80-885945
Finland ▪ 0800-914416
France ▪ 01-60-920-930
Germany ▪ 02103-29-12000
Hong Kong ▪ 800 933 965
Ireland ▪ 1800 555 049
Italy ▪ 800-787980
Japan ▪ 03-6890-7300
Korea (South) ▪ 080-000-7145
Luxembourg ▪ 8002 2076
Mexico ▪ 01-800-7742-436
The Netherlands ▪ 0800 0229592
Norway ▪ 800-18859
Singapore ▪ 1800-742-4368
Spain ▪ 91-630-7050
Sweden ▪ 020-790282
Switzerland ▪ 055-254-22-11
UK ▪ 01293-422-911
USA ▪ 800-426-8157



Sample & Assay Technologies