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

Human Transplant Rejection

Cat. no. 330231 PAHS-166ZA

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™

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Description

The human Transplant Rejection RT² Profiler PCR Array profiles the expression of 84 key genes involved in the rejection of transplanted tissue. The major barrier to successful organ transplantation, the preferred treatment method for end-stage organ failure, still remains organ rejection caused by the recipient's immune response to the transplant. During acute rejection, tissue injury incurred due to isolation, retrieval, and ischemia reperfusion activates elements of the innate immune system, which then initiate and amplify the adaptive immune response. Unchecked innate and adaptive immune responses lead to destruction and death of transplanted cells, tissues, and organs. Even though cell- or antibody-mediated immunity may dominate the acute rejection process, multiple rejection mechanisms play integrative roles in rejection. Ill-defined immunological and non-immunological mechanisms both contribute to chronic rejection by causing fibrotic tissue remodeling and vascular damage. The role and relationship between molecular pathways that lead to tissue destruction during acute and chronic transplant rejection are still not fully understood. Identifying the molecular pathways that trigger tissue injury, signal transduction, and rejection facilitates identification of targets for development of novel immunosuppressive strategies and evaluation of the effectiveness of existent ones. This array analyzes the expression of key innate and adaptive immune response genes mediating acute rejection and genes responsible for fibrosis and vascular permeability during chronic rejection. A set of controls present on each array enables data analysis using the ΔΔCT method of relative quantification, 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 associated with acute and chronic transplant rejection 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	ADAM17	BMP7	C3	CASP1	CASP3	CASP8	CCL11	CCL2	CCL3	CCL4	CCL5	CCR2
B	CCR3	CCR5	CCR7	CD14	CD28	CD40	CD40LG	CD44	CD80	CD86	CD8A	COL1A2
C	CSF2	CTGF	CTLA4	CX3CR1	CXCL10	CXCL11	CXCL9	CXCR3	CXCR4	FAS	FASLG	FCGR1A
D	GZMA	GZMB	ICAM1	IFNG	IL10	IL12A	IL13	IL16	IL1B	IL2	IL2RA	IL3
E	IL32	IL4	IL5	IL6	IL8	ITGA2	ITGAE	ITGAM	MMP1	MMP2	MMP7	MMP9
F	MS4A1	NFKB1	NOS2	PECAM1	PRF1	PSMB9	STAT1	STAT4	STAT6	TAP1	TGFB1	TGFB2
G	TGFB3	THBS1	THBS2	TIMP1	TLR3	TLR4	TLR9	TNF	TNFAIP3	TNFSF10	VCAM1	VEGFA
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.404914	NM_003183	ADAM17	ADAM metallopeptidase domain 17
A02	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7
A03	Hs.529053	NM_000064	C3	Complement component 3
A04	Hs.2490	NM_033292	CASP1	Caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)
A05	Hs.141125	NM_004346	CASP3	Caspase 3, apoptosis-related cysteine peptidase
A06	Hs.599762	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
A07	Hs.54460	NM_002986	CCL11	Chemokine (C-C motif) ligand 11
A08	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
A09	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
A10	Hs.75703	NM_002984	CCL4	Chemokine (C-C motif) ligand 4
A11	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
A12	Hs.511794	NM_001123396	CCR2	Chemokine (C-C motif) receptor 2
B01	Hs.506190	NM_001837	CCR3	Chemokine (C-C motif) receptor 3
B02	Hs.450802	NM_000579	CCR5	Chemokine (C-C motif) receptor 5
B03	Hs.370036	NM_001838	CCR7	Chemokine (C-C motif) receptor 7
B04	Hs.163867	NM_000591	CD14	CD14 molecule
B05	Hs.591629	NM_006139	CD28	CD28 molecule
B06	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
B07	Hs.592244	NM_000074	CD40LG	CD40 ligand
B08	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
B09	Hs.838	NM_005191	CD80	CD80 molecule
B10	Hs.171182	NM_006889	CD86	CD86 molecule
B11	Hs.85258	NM_001768	CD8A	CD8a molecule
B12	Hs.489142	NM_000089	COL1A2	Collagen, type I, alpha 2
C01	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
C02	Hs.591346	NM_001901	CTGF	Connective tissue growth factor
C03	Hs.247824	NM_005214	CTLA4	Cytotoxic T-lymphocyte-associated protein 4
C04	Hs.78913	NM_001337	CX3CR1	Chemokine (C-X3-C motif) receptor 1
C05	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
C06	Hs.632592	NM_005409	CXCL11	Chemokine (C-X-C motif) ligand 11
C07	Hs.77367	NM_002416	CXCL9	Chemokine (C-X-C motif) ligand 9
C08	Hs.198252	NM_001504	CXCR3	Chemokine (C-X-C motif) receptor 3
C09	Hs.593413	NM_003467	CXCR4	Chemokine (C-X-C motif) receptor 4
C10	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
C11	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
C12	Hs.77424	NM_000566	FCGR1A	Fc fragment of IgG, high affinity Ia, receptor (CD64)
D01	Hs.90708	NM_006144	GZMA	Granzyme A (granzyme 1, cytotoxic T-lymphocyte-associated serine esterase 3)
D02	Hs.1051	NM_004131	GZMB	Granzyme B (granzyme 2, cytotoxic T-lymphocyte-associated serine esterase 1)
D03	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
D04	Hs.856	NM_000619	IFNG	Interferon, gamma
D05	Hs.193717	NM_000572	IL10	Interleukin 10
D06	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
D07	Hs.845	NM_002188	IL13	Interleukin 13
D08	Hs.459095	NM_004513	IL16	Interleukin 16

Position	UniGene	GenBank	Symbol	Description
D09	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
D10	Hs.89679	NM_000586	IL2	Interleukin 2
D11	Hs.231367	NM_000417	IL2RA	Interleukin 2 receptor, alpha
D12	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
E01	Hs.943	NM_004221	IL32	Interleukin 32
E02	Hs.73917	NM_000589	IL4	Interleukin 4
E03	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
E04	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
E05	Hs.624	NM_000584	IL8	Interleukin 8
E06	Hs.482077	NM_002203	ITGA2	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
E07	Hs.513867	NM_002208	ITGAE	Integrin, alpha E (antigen CD103, human mucosal lymphocyte antigen 1; alpha polypeptide)
E08	Hs.172631	NM_000632	ITGAM	Integrin, alpha M (complement component 3 receptor 3 subunit)
E09	Hs.83169	NM_002421	MMP1	Matrix metallopeptidase 1 (interstitial collagenase)
E10	Hs.513617	NM_004530	MMP2	Matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
E11	Hs.2256	NM_002423	MMP7	Matrix metallopeptidase 7 (matrilysin, uterine)
E12	Hs.297413	NM_004994	MMP9	Matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
F01	Hs.712553	NM_021950	MS4A1	Membrane-spanning 4-domains, subfamily A, member 1
F02	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F03	Hs.709191	NM_000625	NOS2	Nitric oxide synthase 2, inducible
F04	Hs.514412	NM_000442	PECAM1	Platelet/endothelial cell adhesion molecule
F05	Hs.2200	NM_005041	PRF1	Perforin 1 (pore forming protein)
F06	Hs.654585	NM_002800	PSMB9	Proteasome (prosome, macropain) subunit, beta type, 9 (large multifunctional peptidase 2)
F07	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
F08	Hs.80642	NM_003151	STAT4	Signal transducer and activator of transcription 4
F09	Hs.524518	NM_003153	STAT6	Signal transducer and activator of transcription 6, interleukin-4 induced
F10	Hs.352018	NM_000593	TAP1	Transporter 1, ATP-binding cassette, sub-family B (MDR/TAP)
F11	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
F12	Hs.133379	NM_003238	TGFB2	Transforming growth factor, beta 2
G01	Hs.592317	NM_003239	TGFB3	Transforming growth factor, beta 3
G02	Hs.164226	NM_003246	THBS1	Thrombospondin 1
G03	Hs.371147	NM_003247	THBS2	Thrombospondin 2
G04	Hs.522632	NM_003254	TIMP1	TIMP metallopeptidase inhibitor 1
G05	Hs.657724	NM_003265	TLR3	Toll-like receptor 3
G06	Hs.174312	NM_138554	TLR4	Toll-like receptor 4
G07	Hs.87968	NM_017442	TLR9	Toll-like receptor 9
G08	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G09	Hs.211600	NM_006290	TNFAIP3	Tumor necrosis factor, alpha-induced protein 3
G10	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G11	Hs.109225	NM_001078	VCAM1	Vascular cell adhesion molecule 1
G12	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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.

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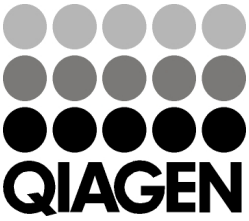

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