

RT² Profiler PCR Array (Rotor-Gene[®] Format)

Mouse Tyrosine Kinases

Cat. no. 330231 PAMM-161ZR

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 Mouse Tyrosine Kinases RT² Profiler PCR Array profiles the expression of 84 receptor and non-receptor tyrosine kinase genes. The protein tyrosine kinase superfamily includes roughly 60 receptor tyrosine kinases (RTKs) and about 30 intracellular tyrosine kinases. RTKs include an extracellular domain, a transmembrane domain, and a catalytic intracellular domain. Upon activation, RTKs dimerize and autophosphorylate their intracellular domain, initiating downstream signaling that often includes non-receptor tyrosine kinases. Non-receptor tyrosine kinases include a catalytic domain and a regulatory domain, which vary for each family. For example, the SRC-family kinase regulatory domain requires autophosphorylation for kinase domain activation, while most other intracellular tyrosine kinase families use different regulatory mechanisms. Tyrosine kinases are involved in many basic biological processes, such as growth, proliferation, and differentiation. These processes are commonly dysregulated during oncogenesis, often due to mutation of key tyrosine kinases or regulators. These oncogenic processes make the tyrosine kinase superfamily members attractive drug targets, and there are several chemotherapeutics targeting tyrosine kinases already on the market (e.g., imatinib mesylate). This array includes most RTKs and non-receptor tyrosine kinases. The results of this array can yield new insights into tyrosine kinase expression and regulation in an experimental model system. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of tyrosine kinase genes 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.



Sample & Assay Technologies

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.329515	NM_009595	Abl2	V-abl Abelson murine leukemia viral oncogene homolog 2 (arg, Abelson-related gene)
A03	Mm.311854	NM_007439	Alk	Anaplastic lymphoma kinase
A04	Mm.4128	NM_009465	Axl	AXL receptor tyrosine kinase
A05	Mm.3962	NM_007549	Blk	B lymphoid kinase
A06	Mm.4475	NM_013482	Btk	Bruton agammaglobulinemia tyrosine kinase
A07	Mm.22574	NM_001037859	Csf1r	Colony stimulating factor 1 receptor
A08	Mm.21974	NM_007783	Csk	C-src tyrosine kinase
A09	Mm.5021	NM_007584	Ddr1	Discoidin domain receptor family, member 1
A10	Mm.229249	NM_022563	Ddr2	Discoidin domain receptor family, member 2
A11	Mm.8534	NM_007912	Egfr	Epidermal growth factor receptor
A12	Mm.133330	NM_023580	Epha1	Eph receptor A1
B01	Mm.2581	NM_010139	Epha2	Eph receptor A2
B02	Mm.1977	NM_010140	Epha3	Eph receptor A3
B03	Mm.400747	NM_007936	Epha4	Eph receptor A4
B04	Mm.137991	NM_007937	Epha5	Eph receptor A5
B05	Mm.257266	NM_010141	Epha7	Eph receptor A7
B06	Mm.1390	NM_007939	Epha8	Eph receptor A8
B07	Mm.22897	NM_173447	Ephb1	Eph receptor B1
B08	Mm.250981	NM_010142	Ephb2	Eph receptor B2
B09	Mm.6972	NM_010143	Ephb3	Eph receptor B3
B10	Mm.34533	NM_010144	Ephb4	Eph receptor B4
B11	Mm.271976	NM_007680	Ephb6	Eph receptor B6
B12	Mm.290822	NM_001003817	ErbB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C01	Mm.373043	NM_010153	ErbB3	V-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
C02	Mm.442420	NM_010154	ErbB4	V-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)
C03	Mm.23039	NM_008000	Fer2	Fer (fms/fps related) protein kinase, testis specific 2
C04	Mm.48757	NM_010194	Fes	Feline sarcoma oncogene
C05	Mm.265716	NM_010206	Fgfr1	Fibroblast growth factor receptor 1
C06	Mm.16340	NM_010207	Fgfr2	Fibroblast growth factor receptor 2
C07	Mm.6904	NM_008010	Fgfr3	Fibroblast growth factor receptor 3
C08	Mm.276715	NM_008011	Fgfr4	Fibroblast growth factor receptor 4
C09	Mm.271665	NM_010208	Fgr	Gardner-Rasheed feline sarcoma viral (Fgr) oncogene homolog
C10	Mm.389712	NM_010228	Flt1	FMS-like tyrosine kinase 1
C11	Mm.194	NM_010229	Flt3	FMS-like tyrosine kinase 3
C12	Mm.3291	NM_008029	Flt4	FMS-like tyrosine kinase 4
D01	Mm.332432	NM_010237	Frk	Fyn-related kinase
D02	Mm.4848	NM_008054	Fyn	Fyn proto-oncogene
D03	Mm.715	NM_010407	Hck	Hemopoietic cell kinase
D04	Mm.275742	NM_010513	Igf1r	Insulin-like growth factor 1 receptor
D05	Mm.26553	NM_010515	Igf2r	Insulin-like growth factor 2 receptor
D06	Mm.268003	NM_010568	Insr	Insulin receptor
D07	Mm.42041	NM_011832	Insrr	Insulin receptor-related receptor
D08	Mm.339927	NM_010583	Itk	IL2-inducible T-cell kinase
D09	Mm.289657	NM_146145	Jak1	Janus kinase 1
D10	Mm.275839	NM_008413	Jak2	Janus kinase 2
D11	Mm.249645	NM_010589	Jak3	Janus kinase 3
D12	Mm.285	NM_010612	Kdr	Kinase insert domain protein receptor
E01	Mm.247073	NM_021099	Kit	Kit oncogene
E02	Mm.293753	NM_010693	Lck	Lymphocyte protein tyrosine kinase
E03	Mm.1740	NM_008523	Ltk	Leukocyte tyrosine kinase
E04	Mm.317331	NM_010747	Lyn	Yamaguchi sarcoma viral (v-yes-1) oncogene homolog
E05	Mm.2918	NM_010768	Matk	Megakaryocyte-associated tyrosine kinase
E06	Mm.239655	NM_008587	Mertk	C-mer proto-oncogene tyrosine kinase
E07	Mm.86844	NM_008591	Met	Met proto-oncogene

Position	UniGene	GenBank	Symbol	Description
E08	Mm.3901	NM_009074	Mst1r	Macrophage stimulating 1 receptor (c-met-related tyrosine kinase)
E09	Mm.16148	NM_010944	Musk	Muscle, skeletal, receptor tyrosine kinase
E10	Mm.80682	NM_001033124	Ntrk1	Neurotrophic tyrosine kinase, receptor, type 1
E11	Mm.130054	NM_008745	Ntrk2	Neurotrophic tyrosine kinase, receptor, type 2
E12	Mm.33496	NM_008746	Ntrk3	Neurotrophic tyrosine kinase, receptor, type 3
F01	Mm.221403	NM_011058	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F02	Mm.4146	NM_008809	Pdgfrb	Platelet derived growth factor receptor, beta polypeptide
F03	Mm.254494	NM_007982	Ptk2	PTK2 protein tyrosine kinase 2
F04	Mm.21613	NM_172498	Ptk2b	PTK2 protein tyrosine kinase 2 beta
F05	Mm.4497	NM_009184	Ptk6	PTK6 protein tyrosine kinase 6
F06	Mm.181833	NM_175168	Ptk7	PTK7 protein tyrosine kinase 7
F07	Mm.57199	NM_009050	Ret	Ret proto-oncogene
F08	Mm.391716	NM_013845	Ror1	Receptor tyrosine kinase-like orphan receptor 1
F09	Mm.342774	NM_013846	Ror2	Receptor tyrosine kinase-like orphan receptor 2
F10	Mm.236163	NM_011282	Ros1	Ros1 proto-oncogene
F11	Mm.335391	NM_013649	Ryk	Receptor-like tyrosine kinase
F12	Mm.22845	NM_009271	Src	Rous sarcoma oncogene
G01	Mm.4752	NM_011481	Srms	Src-related kinase lacking C-terminal regulatory tyrosine and N-terminal myristylation sites
G02	Mm.375031	NM_011518	Sykb	Spleen tyrosine kinase
G03	Mm.319581	NM_001113460	Tec	Tec protein tyrosine kinase
G04	Mm.14313	NM_013690	Tek	Endothelial-specific receptor tyrosine kinase
G05	Mm.4345	NM_011587	Tie1	Tyrosine kinase with immunoglobulin-like and EGF-like domains 1
G06	Mm.358793	NM_031880	Tnk1	Tyrosine kinase, non-receptor, 1
G07	Mm.251115	NM_016788	Tnk2	Tyrosine kinase, non-receptor, 2
G08	Mm.3264	NM_013698	Txk	TXK tyrosine kinase
G09	Mm.20249	NM_018793	Tyk2	Tyrosine kinase 2
G10	Mm.2901	NM_019392	Tyro3	TYRO3 protein tyrosine kinase 3
G11	Mm.4558	NM_009535	Yes1	Yamaguchi sarcoma viral (v-yes) oncogene homolog 1
G12	Mm.8038	NM_009539	Zap70	Zeta-chain (TCR) associated protein kinase
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 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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