RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Tyrosine Kinases

Cat. no. 330231 PARN-161ZR

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 Rat 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.

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	Rn.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.218555	NM_001107186	Abl2	V-abl Abelson murine leukemia viral oncogene homolog 2 (arg, Abelson-related gene)
A03	Rn.202143	NM_001169101	Alk	Anaplastic lymphoma kinase
A04	Rn.161805	NM_001013147	Axl	Axl receptor tyrosine kinase
A05	Rn.20030	NM_001025751	Blk	B lymphoid tyrosine kinase
A06	Rn.26996	NM_001007798	Btk	Bruton agammaglobulinemia tyrosine kinase
A07	Rn.72599	NM_001029901	Csf1r	Colony stimulating factor 1 receptor
A08	Rn.2759	NM_001030039	Csk	C-src tyrosine kinase
A09	Rn.7807	NM_013137	Ddr1	Discoidin domain receptor tyrosine kinase 1
A10	Rn.92730	NM_031764	Ddr2	Discoidin domain receptor tyrosine kinase 2
A11	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
A12	Rn.218221	NM_001107858	Epha1	Eph receptor A1
B01	Rn.118682	NM_001135709	Epha10	EPH receptor A10
B02	Rn.23415	NM_001108977	Epha2	Eph receptor A2
B03	Rn.10713	NM_031564	Epha3	Eph receptor A3
B04	Rn.6202	NM_001162411	Epha4	Eph receptor A4
B05	Rn.24569	NM_001169137	Epha5	EphA5
B06	Rn.10181	NM_134331	Epha7	Eph receptor A7
B07	Rn.62934	XM_342952	Epha8	Eph receptor A8
B08	Rn.46606	NM_001104528	Ephb1	Eph receptor B1
B09	Rn.27233	NM_001127319	Ephb2	Eph receptor B2
B10	Rn.131133	NM_001105868	Ephb3	Eph receptor B3
B11	Rn.125930	NM_001107857	Ephb6	Eph receptor B6
B12	Rn.93966	NM_017003	Erbb2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C01	Rn.10228	NM_017218	Erbb3	V-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
C02	Rn.163078	NM_021687	Erbb4	V-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)
C03	Rn.102629	NM_001106928	Fert2	Fer (fms/fps related) protein kinase, testis specific 2
C04	Rn.104124	NM_001108488	Fes	Feline sarcoma oncogene
C05	Rn.9797	NM_024146	Fgfr1	Fibroblast growth factor receptor 1
C06	Rn.12732	NM_001109892	Fgfr2	Fibroblast growth factor receptor 2
C07	Rn.23671	NM_053429	Fgfr3	Fibroblast growth factor receptor 3
C08	Rn.24104	NM_001109904	Fgfr4	Fibroblast growth factor receptor 4
C09	Rn.11309	NM_024145	Fgr	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog
C10	Rn.10239	NM_019306	Flt1	Fms-related tyrosine kinase 1
C11	Rn.6774	NM_001100822	Flt3	Fms-related tyrosine kinase 3
C12	Rn.81043	NM_053652	Flt4	Fms-related tyrosine kinase 4
D01	Rn.10556	NM_024368	Frk	Fyn-related kinase
D02	Rn.19361	NM_012755	Fyn	FYN oncogene related to SRC, FGR, YES
D03	Rn.10945	NM_013185	Hck	Hemopoietic cell kinase
D04	Rn.10957	NM_052807	Igf1r	Insulin-like growth factor 1 receptor
D05	Rn.270	NM_012756	Igf2r	Insulin-like growth factor 2 receptor
D06	Rn.9876	NM_017071	Insr	Insulin receptor
D07	Rn.44446	NM_022212	Insrr	Insulin receptor-related receptor
D08	Rn.145244	NM_001108825	Itk	IL2-inducible T-cell kinase
D09	Rn.90191	NM_053466	Jak1	Janus kinase 1
D10	Rn.18909	NM_031514	Jak2	Janus kinase 2
D11	Rn.11159	NM_012855	Jak3	Janus kinase 3
D12	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
E01	Rn.54004	NM_022264	Kit	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
E02	Rn.22791	NM_001100709	Lck	Lymphocyte-specific protein tyrosine kinase
E03	Rn.26715	NM_001137641	Lmtk2	Lemur tyrosine kinase 2
E04	Rn.47513	NM_001107763	Ltk	Leukocyte receptor tyrosine kinase
E05	Rn.4338	NM_030857	Lyn	V-yes-1 Yamaguchi sarcoma viral related oncogene homolog
E06	Rn.44303	NM_021859	Matk	Megakaryocyte-associated tyrosine kinase
E07	Rn.207207	NM_022943	Mertk	C-mer proto-oncogene tyrosine kinase

Position	UniGene	GenBank	Symbol	Description
E08	Rn.10617	NM_031517	Met	Met proto-oncogene
E09	Rn.10210	NM_031061	Musk	Muscle, skeletal, receptor tyrosine kinase
E10	Rn.39098	NM_021589	Ntrk1	Neurotrophic tyrosine kinase, receptor, type 1
E11	Rn.11246	NM_012731	Ntrk2	Neurotrophic tyrosine kinase, receptor, type 2
E12	Rn.9963	NM_019248	Ntrk3	Neurotrophic tyrosine kinase, receptor, type 3
F01	Rn.55127	NM_012802	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F02	Rn.98311	NM_031525	Pdgfrb	Platelet derived growth factor receptor, beta polypeptide
F03	Rn.2809	NM_013081	Ptk2	PTK2 protein tyrosine kinase 2
F04	Rn.11025	NM_017318	Ptk2b	PTK2B protein tyrosine kinase 2 beta
F05	Rn.218527	NM_001108968	Ptk6	PTK6 protein tyrosine kinase 6
F06	Rn.198822	NM_001106889	Ptk7	PTK7 protein tyrosine kinase 7
F07	Rn.93200	NM_012643	Ret	Ret proto-oncogene
F08	Rn.16473	NM_001108671	Ror1	Receptor tyrosine kinase-like orphan receptor 1
F09	Rn.211583	NM_001107339	Ror2	Receptor tyrosine kinase-like orphan receptor 2
F10	Rn.87436	NM_012874	Ros1	C-ros oncogene 1 , receptor tyrosine kinase
F11	Rn.11796	NM_080402	Ryk	Receptor-like tyrosine kinase
F12	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G01	Rn.133722	NM_001011961	Srms	Src-related kinase lacking C-terminal regulatory tyrosine and N-terminal myristylation sites
G02	Rn.87407	NM_012758	Syk	Spleen tyrosine kinase
G03	Rn.11797	NM_053432	Tec	Tec protein tyrosine kinase
G04	Rn.9159	NM_001105737	Tek	TEK tyrosine kinase, endothelial
G05	Rn.13171	NM_053545	Tie1	Tyrosine kinase with immunoglobulin-like and EGF-like domains 1
G06	Rn.163138	NM_001107012	Tnk1	Tyrosine kinase, non-receptor, 1
G07	Rn.98335	NM_001008336	Tnk2	Tyrosine kinase, non-receptor, 2
G08	Rn.163245	NM_001024255	Txk	TXK tyrosine kinase
G09	Rn.140313	XM_233741	Tyk2	Tyrosine kinase 2
G10	Rn.8883	NM_017092	Tyro3	TYRO3 protein tyrosine kinase
G11	Rn.214217	NM_033298	Yes1	Yamaguchi sarcoma viral (v-yes) oncogene homolog 1
G12	Rn.17862	NM_001012002	Zap70	Zeta-chain (TCR) associated protein kinase
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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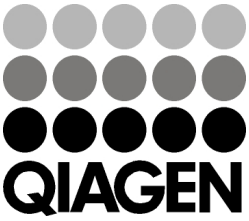

Sample & Assay Technologies