RT² Profiler PCR Array (384-Well Format)

Rat Ubiquitin Ligases

Cat. no. 330231 PARN-3079ZE

For pathway expression analysis

Format	For use with the following real-time cyclers
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 G	Roche® LightCycler® 480 (384-well block)

Description

The Rat Ubiquitin Ligases RT² Profiler PCR Array profiles the expression of 370 ubiquitin ligase genes representing potential drug targets. Ubiquitination, also known as ubiquitylation, regulates degradation of cellular proteins by the ubiquitin-proteasome system. This process involves the sequential action of ubiquitin-activating enzymes (E1), ubiquitin-conjugating enzymes (E2), and ubiquitin ligases (E3). Mammalian genomes encode approximately 12 E1 enzymes, 30–40 E2 enzymes, and 600 E3 enzymes. These enzymes target many protein substrates, and are therefore involved in a wide variety of biological pathways. In addition, ubiquitination does not always target a protein for degradation. For example, monoubiquitination of cell surface transmembrane receptors marks them for endocytosis, whereas polyubiquitination acts as a scaffold for ubiquitin-binding proteins. Disruption of the ubiquitin-proteasomal degradation pathway has been implicated in a wide range of human diseases, such as cancer, diabetes, and cardiovascular and neurodegenerative diseases. The diversity and protein substrate specificity of E3 enzymes allows them to play a major role in normal and disease-related pathways, identifying these enzymes as potential drug targets. Developing drug screening assays requires surveying the expression of not only the drug target, but also related genes with redundant or compensating functions that could possibly cause lower drug efficacy or off-target effects. This array includes ubiquitin ligases from all major E3 families, focusing on the most characterized and broadly expressed enzymes. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of ubiquitin ligases with this array.

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

Shipping and storage

RT² Profiler PCR Arrays in formats E and G 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.

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.40721	NM_001005902	Abtb1	Ankyrin repeat and BTB (POZ) domain containing 1
A02	Rn.11149	NM_134403	Abtb2	Ankyrin repeat and BTB (POZ) domain containing 2
A03	Rn.9619	NM_001108445	Anapc10	Anaphase promoting complex subunit 10
A04	Rn.3964	NM_001126082	Anapc11	Anaphase promoting complex subunit 11
A05	Rn.20099	NM_001100532	Anapc2	Anaphase promoting complex subunit 2
A06	Rn.41255	NM_001107220	Anapc4	Anaphase promoting complex subunit 4
A07	Rn.101004	NM_001080147	Anapc5	Anaphase-promoting complex subunit 5
A08	Rn.162124	NM_001107142	Anapc7	Anaphase promoting complex subunit 7
A09	Rn.168155	NM_001106769	Apc2	Adenomatosis polyposis coli 2
A10	Rn.29865	NM_001013108	Arih1	Ariadne ubiquitin-conjugating enzyme E2 binding protein homolog 1 (Drosophila)
A11	Rn.9570	NM_001012275	Arih2	Ariadne homolog 2 (Drosophila)
A12	Rn.220453	NM_001108232	Asb1	Ankyrin repeat and SOCS box-containing 1
A13	Rn.6582	NM_001106962	Asb11	Ankyrin repeat and SOCS box-containing 11
A14	Rn.69263	NM_001108420	Asb13	Ankyrin repeat and SOCS box-containing 13
A15	Rn.45037	NM_001108231	Asb18	Ankyrin repeat and SOCS box-containing 18
A16	Rn.98677	NM_001011984	Asb2	Ankyrin repeat and SOCS box-containing 2
A17	Rn.153715	NM_001108864	Asb3	Ankyrin repeat and SOCS box-containing 3
A18	Rn.98320	NM_001108109	Asb8	Ankyrin repeat and SOCS box-containing 8
A19	Rn.107838	NM_001105757	Atrx	Alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog, S. cerevisiae)
A20	Rn.48735	NM_022622	Bard1	BRCA1 associated RING domain 1
A21	Rn.101287	NM_001191586	Bcor	BCL6 co-repressor
A22	Rn.159939	NM_001013125	Bfar	Bifunctional apoptosis regulator
A23	Rn.205955	NM_021752	Birc2	Baculoviral IAP repeat-containing 2
A24	Rn.64578	NM_023987	Birc3	Baculoviral IAP repeat-containing 3
B01	Rn.17989	XM_238302	Birc7	Baculoviral IAP repeat-containing 7
B02	Rn.220522	NM_001107368	Bmi1	Bmi1 polycomb ring finger oncogene
B03	Rn.48840	NM_012514	Brca1	Breast cancer 1
B04	Rn.103225	NM_031542	Brca2	Breast cancer 2
B05	Rn.52727	NM_001127300	Brcc3	BRCA1/BRCA2-containing complex, subunit 3
B06	Rn.1432	NM_199270	Bre	Brain and reproductive organ-expressed protein
B07	Rn.205787	NM_001107106	Brwd1	Bromodomain and WD repeat domain containing 1
B08	Rn.162445	NM_001011932	Btbd1	BTB (POZ) domain containing 1
B09	Rn.137100	NM_001017464	Btbd16	BTB (POZ) domain containing 16
B10	Rn.12235	NM_001107782	Btbd3	BTB (POZ) domain containing 3
B11	Rn.21800	NM_001007148	Btrc	Beta-transducin repeat containing
B12	Rn.35589	XM_576396	Cbl	Cas-Br-M (murine) ecotropic retroviral transforming sequence
B13	Rn.21799	NM_133601	Cblb	Cas-Br-M (murine) ecotropic retroviral transforming sequence b
B14	Rn.20550	NM_001034920	Cblc	Cas-Br-M (murine) ecotropic retroviral transforming sequence c
B15	Rn.92651	NM_001108018	Cbll1	Cas-Br-M (murine) ecotropic retroviral transforming sequence-like 1
B16	Rn.43722	NM_001034078	Cbx8	Chromobox homolog 8 (Pc class homolog, Drosophila)
B17	Rn.138089	NM_001025141	Ccnb1ip1	Cyclin B1 interacting protein 1
B18	Rn.15126	NM_001100474	Ccnf	Cyclin F
B19	Rn.66098	NM_001024744	Cdc16	Cell division cycle 16 homolog (S. cerevisiae)
B20	Rn.9262	NM_171993	Cdc20	Cell division cycle 20 homolog (S. cerevisiae)
B21	Rn.139314	NM_001100659	Cdc23	CDC23 (cell division cycle 23, yeast, homolog)
B22	Rn.203072	NM_001013240	Cdc26	Cell division cycle 26
B23	Rn.198335	NM_001024793	Cdc27	Cell division cycle 27 homolog (S. cerevisiae)
B24	Rn.2427	NM_001013103	Cdc34	Cell division cycle 34 homolog (S. cerevisiae)

Position	UniGene	GenBank	Symbol	Description
C01	Rn.1303	NM_031334	Cdh1	Cadherin 1
C02	Rn.87514	NM_053899	Cgrrf1	Cell growth regulator with ring finger domain 1
C03	Rn.15515	NM_001009258	Chfr	Checkpoint with forkhead and ring finger domains
C04	Rn.14523	NM_031804	Cish	Cytokine inducible SH2-containing protein
C05	Rn.203387	NM_001037782	Cnot4	CCR4-NOT transcription complex, subunit 4
C06	Rn.195259	NM_001015003	Crbn	Cereblon
C07	Rn.68078	NM_001108627	Cul1	Cullin 1
C08	Rn.2970	NM_001108417	Cul2	Cullin 2
C09	Rn.101949	NM_001106923	Cul3	Cullin 3
C10	Rn.1987	NM_001127301	Cul4a	Cullin 4A
C11	Rn.21178	NM_001106951	Cul4b	Cullin 4B
C12	Rn.163001	NM_022683	Cul5	Cullin 5
C13	Rn.49119	XM_236927	Cul9	Cullin 9
C14	Rn.199359	NM_001107935	Dcaf10	DDB1 and CUL4 associated factor 10
C15	Rn.16542	NM_001009686	Dcaf11	DDB1 and CUL4 associated factor 11
C16	Rn.220265	NM_001107057	Dcaf7	DDB1 and CUL4 associated factor 7
C17	Rn.203073	NM_001014231	Dcaf8	DDB1 and CUL4 associated factor 8
C18	Rn.86998	NM_001134790	Dda1	DET1 and DDB1 associated 1
C19	Rn.8402	XM_002725785	Ddb1	Damage-specific DNA binding protein 1
C20	Rn.162438	NM_001037194	Det1	De-etiolated homolog 1 (Arabidopsis)
C21	Rn.9090	NM_001008292	Diablo	Diablo homolog (Drosophila)
C22	Rn.18077	NM_001107157	Dtx2	Deltex homolog 2 (Drosophila)
C23	Rn.202909	NM_001047855	Dtx4	Deltex homolog 4 (Drosophila)
C24	Rn.3039	NM_001003401	Enc1	Ectodermal-neural cortex 1
D01	Rn.107979	NM_001107650	Ercc8	Excision repair cross-complementing rodent repair deficiency, complementation group 8
D02	Rn.82534	XM_223701	Fancl	Fanconi anemia, complementation group L
D03	Rn.8828	NM_001025700	Fbxl12	F-box and leucine-rich repeat protein 12
D04	Rn.219656	NM_001107603	Fbxl15	F-box and leucine-rich repeat protein 15
D05	Rn.219693	NM_001108235	Fbxl17	F-box and leucine-rich repeat protein 17
D06	Rn.18281	NM_022272	Fbxl20	F-box and leucine-rich repeat protein 20
D07	Rn.36356	NM_001100568	Fbxl3	F-box and leucine-rich repeat protein 3
D08	Rn.12566	NM_001107919	Fbxl4	F-box and leucine-rich repeat protein 4
D09	Rn.8259	NM_001107222	Fbxl5	F-box and leucine-rich repeat protein 5
D10	Rn.20810	NM_001005563	Fbxl6	F-box and leucine-rich repeat protein 6
D11	Rn.45065	NM_001108545	Fbxl7	F-box and leucine-rich repeat protein 7
D12	Rn.36585	NM_181631	Fbxo11	F-box protein 11
D13	Rn.53606	NM_001013064	Fbxo17	F-box protein 17
D14	Rn.6923	NM_001106119	Fbxo18	F-box only protein 18
D15	Rn.88821	NM_053511	Fbxo2	F-box protein 2
D16	Rn.137498	NM_001108338	Fbxo21	F-box protein 21
D17	Rn.4284	NM_001037770	Fbxo22	F-box protein 22
D18	Rn.39086	NM_001013138	Fbxo23	F-box only protein 23
D19	Rn.154559	NM_001107130	Fbxo24	F-box protein 24
D20	Rn.3663	NM_001014239	Fbxo25	F-box protein 25
D21	Rn.12792	NM_001107203	Fbxo28	F-box protein 28
D22	Rn.204927	NM_001007690	Fbxo30	F-box protein 30
D23	Rn.72619	NM_133521	Fbxo32	F-box protein 32
D24	Rn.41874	NM_001108023	Fbxo33	F-box protein 33
E01	Rn.137885	NM_001107257	Fbxo34	F-box protein 34
E02	Rn.13347	NM_001107385	Fbxo38	F-box protein 38
E03	Rn.45165	NM_001107672	Fbxo4	F-box protein 4
E04	Rn.162839	NM_001108691	Fbxo42	F-box protein 42
E05	Rn.137608	NM_001012117	Fbxo43	F-box protein 43
E06	Rn.64160	NM_001025642	Fbxo46	F-box protein 46
E07	Rn.81585	NM_001106206	Fbxo5	F-box protein 5
E08	Rn.57325	NM_138917	Fbxo6	F-box protein 6
E09	Rn.20218	NM_001012222	Fbxo7	F-box protein 7
E10	Rn.3335	NM_001011998	Fbxo9	F-box protein 9
E11	Rn.213089	XM_001077639	Fbxw10	F-box and WD repeat domain containing 10
E12	Rn.159760	NM_001106993	Fbxw11	F-box and WD repeat domain containing 11
E13	Rn.103250	NM_001107835	Fbxw2	F-box and WD repeat domain containing 2
E14	Rn.219325	NM_001107600	Fbxw4	F-box and WD repeat domain containing 4
E15	Rn.136952	NM_001025730	Fbxw5	F-box and WD repeat domain containing 5
E16	Rn.812	NM_001107145	Fbxw8	F-box and WD repeat domain containing 8
E17	Rn.29201	NM_001081634	Fbxw9	F-box and WD repeat domain containing 9
E18	Rn.219320	NM_001108157	Fem1b	Fem-1 homolog b (C. elegans)
E19	Rn.198207	XM_345975	Foxl2	Forkhead box L2
E20	Rn.218497	NM_001107434	Gan	Gigaxonin
E21	Rn.22813	NM_001010956	Gmcl1	Germ cell-less homolog 1 (Drosophila)
E22	Rn.28116	NM_001108539	Hace1	HECT domain and ankyrin repeat containing, E3 ubiquitin protein ligase 1

Position	UniGene	GenBank	Symbol	Description
E23	Rn.219294	NM_001107608	Hectd2	HECT domain containing 2
E24	Rn.212215	NM_001106117	Hecw1	HECT, C2 and WW domain containing E3 ubiquitin protein ligase 1
F01	Rn.198842	NM_001108218	Hecw2	HECT, C2 and WW domain containing E3 ubiquitin protein ligase 2
F02	Rn.28217	NM_001107520	Herc2	Hect domain and RLD 2
F03	Rn.203362	NM_001108631	Herc3	Hect domain and RLD 3
F04	Rn.18143	NM_001012074	Herc4	Hect domain and RLD 4
F05	Rn.107120	XM_342700	Herc6	Hect domain and RLD 6
F06	Rn.161819	NM_001106478	Hltf	Helicase-like transcription factor
F07	Rn.47908	NM_001106679	Ipp	Intracisternal A particle-promoted polypeptide
F08	Rn.22238	NM_001127555	Irak1	Interleukin-1 receptor-associated kinase 1
F09	Rn.20718	NM_001005887	Itch	Itchy E3 ubiquitin protein ligase homolog (mouse)
F10	Rn.28875	NM_057191	Kbtbd10	Kelch repeat and BTB (POZ) domain containing 10
F11	Rn.148389	NM_001107326	Kbtbd11	Kelch repeat and BTB (POZ) domain containing 11
F12	Rn.1688	NM_001107861	Kbtbd2	Kelch repeat and BTB (POZ) domain containing 2
F13	Rn.219508	NM_001107746	Kbtbd4	Kelch repeat and BTB (POZ) domain containing 4
F14	Rn.47621	NM_001012045	Kbtbd7	Kelch repeat and BTB (POZ) domain containing 7
F15	Rn.103144	NM_198736	Kctd13	Potassium channel tetramerisation domain containing 13
F16	Rn.12228	NM_001108515	Kdm2a	Lysine (K)-specific demethylase 2A
F17	Rn.32641	NM_001100679	Kdm2b	Lysine (K)-specific demethylase 2B
F18	Rn.23467	NM_057152	Keap1	Kelch-like ECH-associated protein 1
F19	Rn.207863	NM_001001510	Klhl10	Kelch-like 10 (Drosophila)
F20	Rn.198416	NM_153730	Klhl12	Kelch-like 12 (Drosophila)
F21	Rn.24229	XM_233297	Klhl13	Kelch-like 13 (Drosophila)
F22	Rn.144676	NM_145671	Klhl17	Kelch-like 17 (Drosophila)
F23	Rn.11786	XM_214331	Klhl2	Kelch-like 2, Mayven (Drosophila)
F24	Rn.44191	NM_001107192	Klhl20	Kelch-like 20 (Drosophila)
G01	Rn.87563	NM_001107996	Klhl21	Kelch-like 21 (Drosophila)
G02	Rn.23143	NM_001107079	Klhl22	Kelch-like 22 (Drosophila)
G03	Rn.163189	NM_181473	Klhl24	Kelch-like 24 (Drosophila)
G04	Rn.8854	NM_001012187	Klhl7	Kelch-like 7 (Drosophila)
G05	Rn.17603	NM_001107944	Klhl9	Kelch-like 9 (Drosophila)
G06	Rn.98417	NM_001001515	Lmo7	LIM domain 7
G07	Rn.25032	NM_001108358	Lnx1	Ligand of numb-protein X 1
G08	Rn.162084	NM_001108329	Lnx2	Ligand of numb-protein X 2
G09	Rn.140941	XM_001052967	LOC474147	RBSC-skeletrophin
G10	Rn.4241	XR_006877	LOC500532	Hypothetical LOC500532
G11	Rn.1938	NM_001009710	Lrrc41	Leucine rich repeat containing 41
G12	Rn.61607	NM_001107833	Lrsam1	Leucine rich repeat and sterile alpha motif containing 1
G13	Rn.86215	XM_225927	Malt1	Mucosa associated lymphoid tissue lymphoma translocation gene 1
G14	Rn.11081	NM_053887	Map3k1	Mitogen activated protein kinase kinase kinase 1
G15	Rn.145219	NM_001034108	March2	Membrane-associated ring finger (C3HC4) 2
G16	Rn.203312	NM_001007759	March3	Membrane-associated ring finger (C3HC4) 3
G17	Rn.218003	NM_001106372	March5	Membrane-associated ring finger (C3HC4) 5
G18	Rn.117620	NM_001012087	March7	Membrane-associated ring finger (C3HC4) 7
G19	Rn.48069	NM_001107882	March8	Membrane-associated ring finger (C3HC4) 8
G20	Rn.216720	NM_001100601	March9	Membrane-associated ring finger (C3HC4) 9
G21	Rn.91829	NM_001108099	Mdm2	Mdm2 p53 binding protein homolog (mouse)
G22	Rn.90967	NM_001012026	Mdm4	Mdm4 p53 binding protein homolog (mouse)
G23	Rn.8138	NM_001107377	Mex3c	Mex-3 homolog C (C. elegans)
G24	Rn.15530	NM_001013964	Mgrn1	Mahogunin, ring finger 1
H01	Rn.218158	NM_001107405	Mib1	Mindbomb homolog 1 (Drosophila)
H02	Rn.15169	NM_022927	Mid1	Midline 1
H03	Rn.101798	NM_001004233	Mkrn1	Makorin ring finger protein 1
H04	Rn.129070	NM_001008314	Mkrn2	Makorin, ring finger protein, 2
H05	Rn.15168	NM_153472	Mnat1	Menage a trois homolog 1, cyclin H assembly factor (Xenopus laevis)
H06	Rn.152339	NM_001106695	Mul1	Mitochondrial ubiquitin ligase activator of NFKB 1
H07	Rn.13538	NM_001106055	Mycbp2	MYC binding protein 2
H08	Rn.1844	NM_001107344	Mylip	Myosin regulatory light chain interacting protein
H09	Rn.27698	NM_001100533	Nacc2	Nucleus accumbens associated 2, BEN and BTB (POZ) domain containing
H10	Rn.99540	NM_012986	Nedd4	Neural precursor cell expressed, developmentally down-regulated 4
H11	Rn.72824	NM_001008300	Nedd4l	Neural precursor cell expressed, developmentally down-regulated 4-like
H12	Rn.218237	NM_001107605	Neurl	Neuralized homolog (Drosophila)
H13	Rn.98792	NM_001107802	Neurl2	Neuralized homolog 2 (Drosophila)
H14	Rn.55459	NM_001024784	Nfx1	Nuclear transcription factor, X-box binding 1
H15	Rn.213893	NM_001170438	Nfxl1	Nuclear transcription factor, X-box binding-like 1
H16	Rn.103777	NM_199236	Nhlrc1	NHL repeat containing 1
H17	Rn.146210	NM_001106260	Nosip	Nitric oxide synthase interacting protein
H18	Rn.163435	NM_001029925	Ostm1	Osteopetrosis associated transmembrane protein 1
H19	Rn.207194	NM_020093	Park2	Parkinson disease (autosomal recessive, juvenile) 2, parkin
H20	Rn.89724	NM_013001	Pax6	Paired box 6
H21	Rn.203514	NM_001007000	Pcgf1	Polycomb group ring finger 1

Position	UniGene	GenBank	Symbol	Description
H22	Rn.11826	NM_001105836	Pcgf2	Polycomb group ring finger 2
H23	Rn.8211	NM_001107245	Pcgf3	Polycomb group ring finger 3
H24	Rn.16897	NM_001013154	Pcgf6	Polycomb group ring finger 6
I01	Rn.218491	NM_001108107	Pdzrn4	PDZ domain containing RING finger 4
I02	Rn.22814	NM_001100565	Peli1	Pellino 1
I03	Rn.210929	NM_001107259	Peli2	Pellino 2
I04	Rn.212107	NM_001127542	Peli3	Pellino 3
I05	Rn.29982	NM_053921	Pex12	Peroxisomal biogenesis factor 12
I06	Rn.24375	NM_001012211	Phf7	PHD finger protein 7
I07	Rn.10530	NM_139093	Phrf1	PHD and ring finger domains 1
I08	Rn.24369	NM_001106829	Pias1	Protein inhibitor of activated STAT, 1
I09	Rn.25546	NM_053337	Pias2	Protein inhibitor of activated STAT, 2
I10	Rn.14548	NM_031784	Pias3	Protein inhibitor of activated STAT, 3
I11	Rn.12810	NM_001100757	Pias4	Protein inhibitor of activated STAT, 4
I12	Rn.18446	NM_138896	Pja2	Praja 2, RING-H2 motif containing
I13	Rn.214058	XM_236296	Pml	Promyelocytic leukemia
I14	Rn.15682	NM_001012470	Pqcp	Polyglutamine-containing protein
I15	Rn.19573	NM_139333	Prpf19	PRP19/PSO4 pre-mRNA processing factor 19 homolog (S. cerevisiae)
I16	Rn.4065	NM_017234	Pxmp3	Peroxisomal membrane protein 3
I17	Rn.8397	NM_001107076	Rab40b	Rab40b, member RAS oncogene family
I18	Rn.22793	NM_001077673	Rad18	RAD18 homolog (S. cerevisiae)
I19	Rn.214052	NM_001109204	Rad51	RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)
I20	Rn.92344	NM_053468	Rag1	Recombination activating gene 1
I21	Rn.95305	XM_219296	Rbbp6	Retinoblastoma binding protein 6
I22	Rn.37161	NM_021764	Rbck1	RanBP-type and C3HC4-type zinc finger containing 1
I23	Rn.8068	NM_001034135	Rbx1	Ring-box 1
I24	Rn.134067	NM_001107839	Rc3h2	Ring finger and CCCH-type zinc finger domains 2
J01	Rn.2007	NM_001007618	Rchy1	Ring finger and CHY zinc finger domain containing 1
J02	Rn.93564	NM_001106744	RGD1307597	Similar to mKIAA0317 protein
J03	Rn.13503	NM_001109598	RGD1309707	Similar to RIKEN cDNA 4930431E10
J04	Rn.105566	NM_001110491	RGD1563982	Similar to F-box only protein 27
J05	Rn.23174	NM_001134564	RGD1564964	Similar to WD repeat domain 11 protein
J06	Rn.16154	NM_001134550	RGD1565257	Similar to zinc finger protein 650
J07	Rn.3782	NM_001107622	Rhobtb1	Rho-related BTB domain containing 1
J08	Rn.163307	NM_001013133	Rhobtb2	Rho-related BTB domain containing 2
J09	Rn.74134	NM_001107645	Rhobtb3	Rho-related BTB domain containing 3
J10	Rn.116589	NM_212549	Ring1	Ring finger protein 1
J11	Rn.85539	NM_001024892	Rlim	Ring finger protein, LIM domain interacting
J12	Rn.11656	NM_001011904	Rnf10	Ring finger protein 10
J13	Rn.82537	NM_001106836	Rnf111	Ring finger protein 111
J14	Rn.18838	NM_001004445	Rnf113a2	Ring finger protein 113A2
J15	Rn.49925	NM_001001517	Rnf114	Ring finger protein 114
J16	Rn.20943	NM_001107540	Rnf121	Ring finger protein 121
J17	Rn.163367	NM_001108424	Rnf125	Ring finger protein 125
J18	Rn.143411	NM_001033702	Rnf126	Ring finger protein 126
J19	Rn.7462	NM_001012010	Rnf135	Ring finger protein 135
J20	Rn.6814	NM_053588	Rnf138	Ring finger protein 138
J21	Rn.209127	NM_001127545	Rnf139	Ring finger protein 139
J22	Rn.178363	NM_001108881	Rnf144b	Ring finger protein 144B
J23	Rn.102005	NM_001105778	Rnf145	Ring finger protein 145
J24	Rn.16849	NM_001012060	Rnf146	Ring finger protein 146
K01	Rn.28251	XM_343561	Rnf149	Ring finger protein 149
K02	Rn.205888	XM_001067775	Rnf150	Ring finger protein 150
K03	Rn.169056	NM_001106305	Rnf152	Ring finger protein 152
K04	Rn.43927	NM_001002279	Rnf166	Ring finger protein 166
K05	Rn.26488	NM_001008361	Rnf167	Ring finger protein 167
K06	Rn.109186	NM_001134986	Rnf180	Ring finger protein 180
K07	Rn.94883	NM_001007647	Rnf181	Ring finger protein 181
K08	Rn.160625	NM_001013973	Rnf190	Ring finger protein 190
K09	Rn.204043	NM_001130560	Rnf19a	Ring finger protein 19A
K10	Rn.18272	NM_001108003	Rnf19b	Ring finger protein 19B
K11	Rn.19719	NM_001025667	Rnf2	Ring finger protein 2
K12	Rn.15969	NM_001107929	Rnf20	Ring finger protein 20
K13	Rn.155693	XM_001075996	Rnf207	Ring finger protein 207
K14	Rn.41695	NM_001107234	Rnf215	Ring finger protein 215
K15	Rn.162100	NM_001107122	Rnf216	Ring finger protein 216

Position	UniGene	GenBank	Symbol	Description
K16	Rn.154151	NM_001108389	Rnf219	Ring finger protein 219
K17	Rn.101888	NM_001012004	Rnf25	Ring finger protein 25
K18	Rn.15010	NM_001113748	Rnf26	Ring finger protein 26
K19	Rn.138034	NM_001108868	Rnf31	Ring finger protein 31
K20	Rn.14904	NM_001004075	Rnf34	Ring finger protein 34
K21	Rn.82699	NM_134467	Rnf38	Ring finger protein 38
K22	Rn.205059	NM_019182	Rnf4	Ring finger protein 4
K23	Rn.162466	NM_153471	Rnf40	Ring finger protein 40
K24	Rn.74790	NM_001012195	Rnf41	Ring finger protein 41
L01	Rn.21345	NM_001024795	Rnf44	Ring finger protein 44
L02	Rn.53030	NM_001107118	Rnf6	Ring finger protein (C3H2C3 type) 6
L03	Rn.2768	NM_001106848	Rnf7	Ring finger protein 7
L04	Rn.12463	NM_001025727	Rnf8	Ring finger protein 8
L05	Rn.205644	NM_001100945	Rspry1	Ring finger and SPRY domain containing 1
L06	Rn.25144	NM_031596	Sart1	Squamous cell carcinoma antigen recognized by T cells
L07	Rn.163325	NM_198764	Sh3rf1	SH3 domain containing ring finger 1
L08	Rn.211767	NM_001034187	Sh3rf2	SH3 domain containing ring finger 2
L09	Rn.2515	NM_001107470	Shprh	SNF2 histone linker PHD RING helicase
L10	Rn.73937	NM_080905	Siah1a	Seven in absentia 1A
L11	Rn.29192	NM_134457	Siah2	Seven in absentia 2
L12	Rn.3477	NM_001007608	Skp1	S-phase kinase-associated protein 1
L13	Rn.154278	NM_001106416	Skp2	S-phase kinase-associated protein 2 (p45)
L14	Rn.92843	NM_001107061	Smurf2	SMAD specific E3 ubiquitin protein ligase 2
L15	Rn.82754	NM_145879	Socs1	Suppressor of cytokine signaling 1
L16	Rn.205056	NM_058208	Socs2	Suppressor of cytokine signaling 2
L17	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
L18	Rn.62929	NM_001107256	Socs4	Suppressor of cytokine signaling 4
L19	Rn.47568	NM_001109274	Socs5	Suppressor of cytokine signaling 5
L20	Rn.8206	XM_225667	Socs6	Suppressor of cytokine signaling 6
L21	Rn.162165	NM_001100496	Spop	Speckle-type POZ protein
L22	Rn.219023	NM_001107994	Spsb1	SplA/ryanodine receptor domain and SOCS box containing 1
L23	Rn.162769	NM_001009660	Spsb2	SplA/ryanodine receptor domain and SOCS box containing 2
L24	Rn.20038	NM_001106988	Spsb3	SplA/ryanodine receptor domain and SOCS box containing 3
M01	Rn.11581	NM_001106849	Spsb4	SplA/ryanodine receptor domain and SOCS box containing 4
M02	Rn.6504	NM_001025625	Stub1	STIP1 homology and U-Box containing protein 1
M03	Rn.162486	NM_001100739	Syvn1	Synovial apoptosis inhibitor 1, synoviolin
M04	Rn.5996	NM_022593	Tceb1	Transcription elongation factor B (SIII), polypeptide 1
M05	Rn.18199	NM_182950	Tnfaip1	Tumor necrosis factor, alpha-induced protein 1 (endothelial)
M06	Rn.55605	NM_001108658	Topors	Topoisomerase I binding, arginine/serine-rich
M07	Rn.105232	NM_001107815	Traf2	Tnf receptor-associated factor 2
M08	Rn.12033	NM_001108724	Traf3	Tnf receptor-associated factor 3
M09	Rn.3219	NM_001107017	Traf4	Tnf receptor associated factor 4
M10	Rn.220435	NM_001107754	Traf6	Tnf receptor-associated factor 6
M11	Rn.163128	NM_001127548	Traf7	Tnf receptor-associated factor 7
M12	Rn.8891	NM_001109004	Traip	TRAF-interacting protein
M13	Rn.9308	NM_001108276	Trim11	Tripartite motif-containing 11
M14	Rn.83735	NM_001012210	Trim13	Tripartite motif-containing 13
M15	Rn.48706	NM_022798	Trim17	Tripartite motif-containing 17
M16	Rn.16973	NM_001108552	Trim2	Tripartite motif-containing 2
M17	Rn.6763	XM_342183	Trim23	Tripartite motif-containing 23
M18	Rn.34382	NM_001009536	Trim25	Tripartite motif-containing 25
M19	Rn.163420	NM_001011665	Trim26	Tripartite motif-containing 26
M20	Rn.8393	NM_001106115	Trim27	Tripartite motif-containing 27
M21	Rn.198494	NM_053916	Trim28	Tripartite motif-containing 28
M22	Rn.203982	NM_031786	Trim3	Tripartite motif-containing 3
M23	Rn.4118	NM_001012103	Trim32	Tripartite motif-containing 32
M24	Rn.137958	NM_001106147	Trim36	Tripartite motif-containing 36
N01	Rn.9335	NM_001108288	Trim37	Tripartite motif-containing 37
N02	Rn.211560	NM_213562	Trim39	Tripartite motif-containing 39
N03	Rn.215808	NM_001009175	Trim40	Tripartite motif-containing 40
N04	Rn.216342	NM_001134737	Trim41	Tripartite motif-containing 41
N05	Rn.109830	NM_001013955	Trim42	Tripartite motif-containing 42
N06	Rn.8005	NM_001013203	Trim44	Tripartite motif-containing 44
N07	Rn.102590	NM_001106453	Trim45	Tripartite motif-containing 45
N08	Rn.34764	NM_001107691	Trim46	Tripartite motif-containing 46
N09	Rn.198897	NM_001109585	Trim47	Tripartite motif-containing 47
N10	Rn.12117	NM_001014023	Trim5	Tripartite motif-containing 5
N11	Rn.43040	NM_181080	Trim50	Tripartite motif-containing 50
N12	Rn.6303	NM_001013217	Trim54	Tripartite motif-containing 54
N13	Rn.76142	NM_001012218	Trim55	Tripartite motif-containing 55
N14	Rn.40636	NM_080903	Trim63	Tripartite motif-containing 63

Position	UniGene	GenBank	Symbol	Description
N15	Rn.95375	NM_001013160	Trim69	Tripartite motif-containing 69
N16	Rn.23565	NM_001077675	Trim72	Tripartite motif-containing 72
N17	Rn.95112	NM_001128083	Trim8	Tripartite motif-containing 8
N18	Rn.209223	NM_130420	Trim9	Tripartite motif-containing 9
N19	Rn.8277	NM_001031659	Trip12	Thyroid hormone receptor interactor 12
N20	Rn.218020	NM_001100748	Trpc4ap	Transient receptor potential cation channel, subfamily C, member 4 associated protein
N21	Rn.214632	NM_001108315	Ttc3	Tetratricopeptide repeat domain 3
N22	Rn.4300	NM_031687	Uba52	Ubiquitin A-52 residue ribosomal protein fusion product 1
N23	Rn.1253	NM_138895	Ubb	Ubiquitin B
N24	Rn.3761	NM_017314	Ubc	Ubiquitin C
O01	Rn.102204	NM_207610	Ube4a	Ubiquitination factor E4A (UFD2 homolog, yeast)
O02	Rn.16485	NM_001033997	Ubox5	U-box domain containing 5
O03	Rn.67473	NM_001178071	Ubr2	Ubiquitin protein ligase E3 component n-recognin 2
O04	Rn.37755	NM_001039026	Ubr4	Ubiquitin protein ligase E3 component n-recognin 4
O05	Rn.54812	XM_576252	Ubr5	Ubiquitin protein ligase E3 component n-recognin 5
O06	Rn.7690	NM_001007705	Ubr7	Ubiquitin protein ligase E3 component n-recognin 7 (putative)
O07	Rn.54318	NM_001008882	Uhrf1	Ubiquitin-like with PHD and ring finger domains 1
O08	Rn.2173	NM_001107585	Uhrf2	Ubiquitin-like with PHD and ring finger domains 2
O09	Rn.198909	NM_001108306	Unk	Unkempt homolog (Drosophila)
O10	Rn.11059	NM_052801	Vhl	Von Hippel-Lindau tumor suppressor
O11	Rn.2637	NM_001108138	Vps11	Vacuolar protein sorting 11 homolog (S. cerevisiae)
O12	Rn.151911	NM_001106499	Vps18	Vacuolar protein sorting 18 homolog (S. cerevisiae)
O13	Rn.6409	NM_001107355	Vps41	Vacuolar protein sorting 41 homolog (S. cerevisiae)
O14	Rn.101918	NM_001014179	Wdsub1	WD repeat, sterile alpha motif and U-box domain containing 1
O15	Rn.16646	NM_001107908	Wdtc1	WD and tetratricopeptide repeats 1
O16	Rn.18535	NM_001025664	Wsb1	WD repeat and SOCS box-containing 1
O17	Rn.4063	NM_001007616	Wsb2	WD repeat and SOCS box-containing 2
O18	Rn.144867	NM_001024757	Wwp1	WW domain containing E3 ubiquitin protein ligase 1
O19	Rn.91239	NM_022231	Xiap	X-linked inhibitor of apoptosis
O20	Rn.210488	NM_001004444	Zbtb1	Zinc finger and BTB domain containing 1
O21	Rn.162011	NM_001107097	Zbtb11	Zinc finger and BTB domain containing 11
O22	Rn.214576	NM_001013181	Zbtb16	Zinc finger and BTB domain containing 16
O23	Rn.15582	NM_001012105	Zbtb17	Zinc finger and BTB domain containing 17
O24	Rn.168502	NM_001105880	Zbtb20	Zinc finger and BTB domain containing 20
P01	Rn.104538	NM_001012471	Zbtb38	Zinc finger and BTB domain containing 38
P02	Rn.62592	NM_001130537	Zbtb39	Zinc finger and BTB domain containing 39
P03	Rn.7867	NM_001012094	Zbtb43	Zinc finger and BTB domain containing 43
P04	Rn.23809	NM_001106657	Zbtb5	Zinc finger and BTB domain containing 5
P05	Rn.162908	NM_054002	Zbtb7a	Zinc finger and BTB domain containing 7a
P06	Rn.36809	NM_001108560	Zfp364	Zinc finger protein 364
P07	Rn.1772	NM_001169120	Zfp91	Zinc finger protein 91
P08	Rn.32245	NM_001108628	Znrf2	Zinc and ring finger 2
P09	Rn.104114	NM_001024878	Znrf4	Zinc and ring finger 4
P10	Rn.109407	NM_001011960	Zswim2	Zinc finger, SWIM-type containing 2
P11	Rn.94978	NM_031144	Actb	Actin, beta
P12	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
P13	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
P14	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
P15	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
P16	N/A	U26919	RGDC	Rat Genomic DNA Contamination
P17	N/A	U26919	RGDC	Rat Genomic DNA Contamination
P18	N/A	U26919	RGDC	Rat Genomic DNA Contamination
P19	N/A	SA_00104	RTC	Reverse Transcription Control
P20	N/A	SA_00104	RTC	Reverse Transcription Control
P21	N/A	SA_00104	RTC	Reverse Transcription Control
P22	N/A	SA_00103	PPC	Positive PCR Control
P23	N/A	SA_00103	PPC	Positive PCR Control
P24	N/A	SA_00103	PPC	Positive PCR Control

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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 (8)*	For 4 x 384 assays in 384-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad model CFX384; Roche LightCycler 480 (384-well); all other cyclers	330501
RT² SYBR Green ROX™ qPCR Mastermix (8)*	For 4 x 384 assays in 384-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 7900HT, ViiA 7 (384-well blocks)	330521
RT² SYBR Green Fluor qPCR Mastermix (8)*	For 4 x 384 assays in 384-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler®, iQ™5, MyiQ™, MyiQ2	330511

* Larger kit sizes available; please inquire.

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