

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

Rat Female Infertility

Cat. no. 330231 PARN-164ZA

For pathway expression analysis

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



Sample & Assay Technologies

Description

The Rat Female Infertility RT² Profiler PCR Array profiles the expression of 84 key genes involved in endometrial changes in early pregnancy. During each human menstrual cycle, the uterine endometrial layer prepares for a pregnancy while one ovary releases a mature oocyte. If the oocyte is fertilized, it will begin to divide as it travels through the fallopian tube and into the uterus. The endometrium must undergo significant gene expression changes, required for successful embryonic implantation. These changes involve signaling pathways such as interleukin-1, WNT, and prostaglandins, as well as biological processes such as apoptosis, cell cycle regulation, and leukocyte migration into the receptive endometrium. The endometrium is only receptive to the embryo for 3–5 days per menstrual cycle, called the window of implantation. A large number of couples suffer from infertility, although there are now many assisted reproductive technologies that can achieve a viable pregnancy. While these technologies, such as in vitro fertilization (IVF), can identify the most promising embryos, more than half of IVF embryos fail to implant. A shorter or nonexistent window of implantation may explain this phenomenon for some infertile women. Many microarray studies have been published identifying endometrial gene expression changes during the window of implantation, as well as a comparison of fertile and infertile women. Additional studies are still required to identify the underlying molecular mechanisms of this complex process, potentially determined by monitoring expression of the key genes included on this array. A set of controls present on each array enables data analysis using the $\Delta\Delta\text{CT}$ 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 involved in embryonic implantation and female infertility 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	Akt1	Anxa2	Apod	Ar	Areg	Bax	Bcl2	C2	C3	Calca	Casp3	Ccl5
B	Ccnb1	Cd55	Cdh1	Cfd	Cldn4	Comp	Crabp2	Csf1	Ctnnb1	Cxcl12	Dkk1	Egf
C	Egfr	Esr1	Esr2	F3	Fbn1	Fn1	Gadd45a	Gast	Gdf15	Gpx3	Hbegf	Hoxa10
D	Icam1	Igf1	Igfbp1	Il11	Il15	Il1a	Il1b	Il1r1	Il6	Ilga4	Ilgav	Ilgb3
E	Kdr	Lama1	Lamc2	Lep	Lif	Lifr	Maoa	Mid1	Mki67	Mmp2	Mmp7	Mmp9
F	Mx1	Muc1	Olfm1	Pcna	Pgf	Pgr	Pri	Ptgs1	Ptgs2	RGD1564419	Sell	Sfrp4
G	Sod1	Spp1	Stat3	Stmn1	Tgfb1	Timp1	Tnf	Tnfrsf10b	Tp53	Vcam1	Vegfa	Wnt2
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A02	Rn.90546	NM_019905	Anxa2	Annexin A2
A03	Rn.11339	NM_012777	Apod	Apolipoprotein D
A04	Rn.9813	NM_012502	Ar	Androgen receptor
A05	Rn.10568	NM_017123	Areg	Amphiregulin
A06	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A07	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A08	Rn.98333	NM_172222	C2	Complement component 2
A09	Rn.11378	NM_016994	C3	Complement component 3
A10	Rn.90085	NM_017338	Calca	Calcitonin-related polypeptide alpha
A11	Rn.10562	NM_012922	Casp3	Caspase 3
A12	Rn.8019	NM_031116	Ccl5	Chemokine (C-C motif) ligand 5
B01	Rn.9232	NM_171991	Ccnb1	Cyclin B1
B02	Rn.18841	NM_022269	Cd55	Cd55 molecule
B03	Rn.1303	NM_031334	Cdh1	Cadherin 1
B04	Rn.16172	NM_001077642	Cfd	Complement factor D (adipsin)
B05	Rn.6830	NM_001012022	Cldn4	Claudin 4
B06	Rn.10343	NM_012834	Comp	Cartilage oligomeric matrix protein
B07	Rn.11333	NM_017244	Crabp2	Cellular retinoic acid binding protein 2
B08	Rn.83632	NM_023981	Csf1	Colony stimulating factor 1 (macrophage)
B09	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B10	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
B11	Rn.214343	NM_001106350	Dkk1	Dickkopf homolog 1 (Xenopus laevis)
B12	Rn.6075	NM_012842	Egf	Epidermal growth factor
C01	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
C02	Rn.10595	NM_012689	Esr1	Estrogen receptor 1
C03	Rn.37460	NM_012754	Esr2	Estrogen receptor 2 (ER beta)
C04	Rn.9980	NM_013057	F3	Coagulation factor III (thromboplastin, tissue factor)
C05	Rn.12759	NM_031825	Fbn1	Fibrillin 1
C06	Rn.1604	NM_019143	Fn1	Fibronectin 1
C07	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
C08	Rn.9754	NM_012849	Gast	Gastrin
C09	Rn.44228	NM_019216	Gdf15	Growth differentiation factor 15
C10	Rn.108074	NM_022525	Gpx3	Glutathione peroxidase 3
C11	Rn.10148	NM_012945	Hbegf	Heparin-binding EGF-like growth factor
C12	Rn.852	NM_001129878	Hoxa10	Homeo box A10
D01	Rn.12	NM_012967	Icam1	Intercellular adhesion molecule 1
D02	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D03	Rn.34026	NM_013144	Igfbp1	Insulin-like growth factor binding protein 1
D04	Rn.198483	NM_133519	Il11	Interleukin 11
D05	Rn.2490	NM_013129	Il15	Interleukin 15
D06	Rn.12300	NM_017019	Il1a	Interleukin 1 alpha
D07	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
D08	Rn.9758	NM_013123	Il1r1	Interleukin 1 receptor, type 1
D09	Rn.9873	NM_012589	Il6	Interleukin 6

Position	UniGene	GenBank	Symbol	Description
D10	Rn.12704	NM_001107737	Itga4	Integrin, alpha 4
D11	Rn.23339	NM_001106549	Itgav	Integrin, alpha V
D12	Rn.162202	NM_153720	Itgb3	Integrin, beta 3
E01	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
E02	Rn.2807	NM_001108237	Lama1	Laminin, alpha 1
E03	Rn.9278	NM_001100640	Lamc2	Laminin, gamma 2
E04	Rn.44444	NM_013076	Lep	Lepin
E05	Rn.44379	NM_022196	Lif	Leukemia inhibitory factor
E06	Rn.14529	NM_031048	Lifr	Leukemia inhibitory factor receptor alpha
E07	Rn.163443	NM_033653	Maoa	Monoamine oxidase A
E08	Rn.15169	NM_022927	Mid1	Midline 1
E09	Rn.73551	XM_225460	Mki67	Antigen identified by monoclonal antibody Ki-67
E10	Rn.6422	NM_031054	Mmp2	Matrix metalloproteinase 2
E11	Rn.10282	NM_012864	Mmp7	Matrix metalloproteinase 7
E12	Rn.10209	NM_031055	Mmp9	Matrix metalloproteinase 9
F01	Rn.18117	NM_031059	Msx1	Msh homeobox 1
F02	Rn.10779	NM_012602	Muc1	Mucin 1, cell surface associated
F03	Rn.11005	NM_053573	Olfm1	Olfactomedin 1
F04	Rn.223	NM_022381	Pcna	Proliferating cell nuclear antigen
F05	Rn.6960	NM_053595	Pgf	Placental growth factor
F06	Rn.10303	NM_022847	Pgr	Progesterone receptor
F07	Rn.9759	NM_012629	Prl	Prolactin
F08	Rn.44404	NM_017043	Ptgs1	Prostaglandin-endoperoxide synthase 1
F09	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
F10	Rn.2617	NM_001109234	RGD156441 9	Similar to hypothetical gene supported by BC025338
F11	Rn.10461	NM_019177	Sell	Selectin L
F12	Rn.10788	NM_053544	Sfrp4	Secreted frizzled-related protein 4
G01	Rn.6059	NM_017050	Sod1	Superoxide dismutase 1, soluble
G02	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
G03	Rn.10247	NM_012747	Stat3	Signal transducer and activator of transcription 3
G04	Rn.555	NM_017166	Stmn1	Stathmin 1
G05	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G06	Rn.25754	NM_053819	Timp1	TIMP metalloproteinase inhibitor 1
G07	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G08	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G09	Rn.54443	NM_030989	Tp53	Tumor protein p53
G10	Rn.11267	NM_012889	Vcam1	Vascular cell adhesion molecule 1
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.203764	XM_575397	Wnt2	Wingless-type MMTV integration site family member 2
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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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
RT ² 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
RT ² 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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