

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

Human Female Infertility

Cat. no. 330231 PAHS-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 Human 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	HOXA11	ICAM1	IGF1	IGFBP1	IL11	IL15	IL1A	IL1B	IL1R1	IL6	ITGA4	ITGAV
E	ITGB3	KDR	LAMC2	LEP	LIF	LIFR	MAOA	MID1	MKI67	MMP2	MMP7	MMP9
F	MSX1	MUC1	OLFAM1	PAEP	PCNA	PGF	PGR	PRL	PTGS1	PTGS2	SELL	SFRP4
G	SOD1	SPP1	STAT3	STMN1	TGFB1	TIMP1	TNF	TNFRSF10B	TP53	VCAM1	VEGFA	WNT2
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.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A02	Hs.511605	NM_004039	ANXA2	Annexin A2
A03	Hs.522555	NM_001647	APOD	Apolipoprotein D
A04	Hs.496240	NM_000044	AR	Androgen receptor
A05	Hs.270833	NM_001657	AREG	Amphiregulin
A06	Hs.624291	NM_004324	BAX	BCL2-associated X protein
A07	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A08	Hs.408903	NM_000063	C2	Complement component 2
A09	Hs.529053	NM_000064	C3	Complement component 3
A10	Hs.37058	NM_001741	CALCA	Calcitonin-related polypeptide alpha
A11	Hs.141125	NM_004346	CASP3	Caspase 3, apoptosis-related cysteine peptidase
A12	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
B01	Hs.23960	NM_031966	CCNB1	Cyclin B1
B02	Hs.126517	NM_000574	CD55	CD55 molecule, decay accelerating factor for complement (Cromer blood group)
B03	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B04	Hs.155597	NM_001928	CFD	Complement factor D (adipsin)
B05	Hs.729359	NM_001305	CLDN4	Claudin 4
B06	Hs.1584	NM_000095	COMP	Cartilage oligomeric matrix protein
B07	Hs.405662	NM_001878	CRABP2	Cellular retinoic acid binding protein 2
B08	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B09	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B10	Hs.522891	NM_000609	CXCL12	Chemokine (C-X-C motif) ligand 12
B11	Hs.40499	NM_012242	DKK1	Dickkopf homolog 1 (Xenopus laevis)
B12	Hs.419815	NM_001963	EGF	Epidermal growth factor
C01	Hs.488293	NM_005228	EGFR	Epidermal growth factor receptor
C02	Hs.208124	NM_000125	ESR1	Estrogen receptor 1
C03	Hs.729020	NM_001437	ESR2	Estrogen receptor 2 (ER beta)
C04	Hs.62192	NM_001993	F3	Coagulation factor III (thromboplastin, tissue factor)
C05	Hs.591133	NM_000138	FBN1	Fibrillin 1
C06	Hs.203717	NM_002026	FN1	Fibronectin 1
C07	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
C08	Hs.2681	NM_000805	GAST	Gastrin
C09	Hs.616962	NM_004864	GDF15	Growth differentiation factor 15
C10	Hs.386793	NM_002084	GPX3	Glutathione peroxidase 3 (plasma)
C11	Hs.799	NM_001945	HBEGF	Heparin-binding EGF-like growth factor
C12	Hs.110637	NM_018951	HOXA10	Homeobox A10
D01	Hs.249171	NM_005523	HOXA11	Homeobox A11
D02	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
D03	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)
D04	Hs.642938	NM_000596	IGFBP1	Insulin-like growth factor binding protein 1
D05	Hs.467304	NM_000641	IL11	Interleukin 11
D06	Hs.654378	NM_000585	IL15	Interleukin 15
D07	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
D08	Hs.126256	NM_000576	IL1B	Interleukin 1, beta

Position	UniGene	GenBank	Symbol	Description
D09	Hs.701982	NM_000877	IL1R1	Interleukin 1 receptor, type I
D10	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D11	Hs.694732	NM_000885	ITGA4	Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)
D12	Hs.436873	NM_002210	ITGAV	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
E01	Hs.218040	NM_000212	ITGB3	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
E02	Hs.479756	NM_002253	KDR	Kinase insert domain receptor (a type III receptor tyrosine kinase)
E03	Hs.591484	NM_005562	LAMC2	Laminin, gamma 2
E04	Hs.194236	NM_000230	LEP	Leptin
E05	Hs.2250	NM_002309	LIF	Leukemia inhibitory factor (cholinergic differentiation factor)
E06	Hs.133421	NM_002310	LIFR	Leukemia inhibitory factor receptor alpha
E07	Hs.183109	NM_000240	MAOA	Monoamine oxidase A
E08	Hs.27695	NM_000381	MID1	Midline 1 (Opitz/BBB syndrome)
E09	Hs.689823	NM_002417	MKI67	Antigen identified by monoclonal antibody Ki-67
E10	Hs.513617	NM_004530	MMP2	Matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
E11	Hs.2256	NM_002423	MMP7	Matrix metalloproteinase 7 (matrilysin, uterine)
E12	Hs.297413	NM_004994	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
F01	Hs.424414	NM_002448	MSX1	Msh homeobox 1
F02	Hs.89603	NM_001018016	MUC1	Mucin 1, cell surface associated
F03	Hs.522484	NM_006334	OLFM1	Olfactomedin 1
F04	Hs.532325	NM_002571	PAEP	Progesterone-associated endometrial protein
F05	Hs.728886	NM_182649	PCNA	Proliferating cell nuclear antigen
F06	Hs.252820	NM_002632	PGF	Placental growth factor
F07	Hs.32405	NM_000926	PGR	Progesterone receptor
F08	Hs.1905	NM_000948	PRL	Prolactin
F09	Hs.201978	NM_000962	PTGS1	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)
F10	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F11	Hs.728756	NM_000655	SELL	Selectin L
F12	Hs.658169	NM_003014	SFRP4	Secreted frizzled-related protein 4
G01	Hs.443914	NM_000454	SOD1	Superoxide dismutase 1, soluble
G02	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
G03	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G04	Hs.209983	NM_005563	STMN1	Stathmin 1
G05	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G06	Hs.522632	NM_003254	TIMP1	TIMP metalloproteinase inhibitor 1
G07	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G08	Hs.521456	NM_003842	TNFRSF10B	Tumor necrosis factor receptor superfamily, member 10b
G09	Hs.654481	NM_000546	TP53	Tumor protein p53
G10	Hs.109225	NM_001078	VCAM1	Vascular cell adhesion molecule 1
G11	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G12	Hs.567356	NM_003391	WNT2	Wingless-type MMTV integration site family member 2
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.
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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