

RT² Profiler PCR Array (Rotor-Gene® Format)

Dog Prostate Cancer

Cat. no. 330231 PAFD-135ZR

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 Dog Prostate Cancer RT² Profiler PCR Array profiles the expression of 84 key genes commonly involved in prostate cancer development. One of the top lethal cancers in the United States, prostate cancer is a neoplasm of the male reproductive gland that manifests primarily after the age of fifty. The molecular cause of prostate cancer is still unclear, but is often associated with deregulated androgen signaling and aberrant metabolism of macromolecules such as fatty acids. Indeed, androgen ablation therapy causes regression of primary and metastatic androgen-dependent prostate cancer. Androgen receptor expression seems to promote prostate cancer cell survival, but inhibiting the androgen receptor has, so far, been clinically less effective than predicted. Polyunsaturated fatty acids cause prostate tumor progression and increased mortality, while diets rich in omega-3 fatty acids seem to benefit prostate cancer patients. Research directed at these pathways may yield insights into the molecular mechanisms behind prostate oncogenesis. This array represents genes involved in androgen receptor, PI3 kinase/AKT, and PTEN signaling, as well as the cell cycle and apoptotic pathways. The 84 key genes also include deregulated genes detected routinely in molecular analysis of prostate cancer samples and in high-throughput microarray profiling studies, as well as genes known to have differentially methylated promoters in prostate cancer. Prostate cancers tend to metastasize; therefore, the array includes genes associated with metastatic potential. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in prostate cancer initiation, progression, and metastasis 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
1	N/A	XM_548250	ACACA	Acetyl-CoA carboxylase alpha
2	N/A	XM_005623876	AKT1	V-akt murine thymoma viral oncogene homolog 1
3	N/A	XM_014111995	APC	Adenomatous polyposis coli
4	Cfa.141	NM_001003053	AR	Androgen receptor
5	N/A	XM_005633683	ARNTL	Aryl hydrocarbon receptor nuclear translocator-like
6	Cfa.110	NM_001002949	BCL2	B-cell CLL/lymphoma 2
7	N/A	XM_863461	CAMKK1	Calcium/calmodulin-dependent protein kinase kinase 1, alpha
8	N/A	XM_014116869	CAMSAP1	Calmodulin regulated spectrin-associated protein 1
9	Cfa.84	NM_001003042	CASP3	Caspase 3, apoptosis-related cysteine peptidase
10	Cfa.3850	NM_001003296	CAV1	Caveolin 1, caveolae protein, 22kDa
11	Cfa.15829	NM_001010997	CAV2	Caveolin 2
12	N/A	XM_005635456	CCNA1	Cyclin A1
13	Cfa.16248	NM_001005757	CCND1	Cyclin D1
14	N/A	XM_849493	CCND2	Cyclin D2
15	Cfa.3488	NM_001287125	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
16	Cfa.48916	XM_014117791	CDKN2A	Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)
17	Cfa.14017	NM_001013417	CLN3	Ceroid-lipofuscinosis, neuronal 3
18	N/A	XM_014110990	CREB1	CAMP responsive element binding protein 1
19	N/A	XM_005627201	DAXX	Death-domain associated protein
20	N/A	XM_005637325	DDX11	DEAD/H (Asp-Glu-Ala-Asp/His) box helicase 11
21	N/A	NM_001284475	DKK3	Dickkopf homolog 3 (Xenopus laevis)
22	Cfa.1721	NM_001145071	DLC1	Deleted in liver cancer 1
23	N/A	XM_014110471	ECT2	Epithelial cell transforming sequence 2 oncogene
24	Cfa.3590	NM_001010943	EDNRB	Endothelin receptor type B
25	Cfa.3903	XM_014120756	EGFR	Epidermal growth factor receptor
26	N/A	XM_003433338	EGR3	Early growth response 3
27	N/A	XM_005638911	ERG	V-ets avian erythroblastosis virus E26 oncogene homolog
28	N/A	XM_005628570	ETV1	Ets variant 1
29	Cfa.17136	XM_005624145	FASN	Fatty acid synthase
30	Cfa.48550	NM_001271778	FOLH1	Folate hydrolase (prostate-specific membrane antigen) 1
31	N/A	XM_014107340	FOXO1	Forkhead box O1
32	N/A	XM_005640253	GCA	Grancalcin, EF-hand calcium binding protein
33	N/A	XM_845766	GNRH1	Gonadotropin-releasing hormone 1 (luteinizing-releasing hormone)
34	Cfa.40786	NM_001164454	GPX3	Glutathione peroxidase 3
35	Cfa.26926	NM_001252167	GSTP1	Glutathione S-transferase pi 1
36	N/A	XM_532657	HAL	Histidine ammonia-lyase
37	N/A	XM_536323	HMGCR	3-hydroxy-3-methylglutaryl-CoA reductase
38	Cfa.3888	NM_001313855	IGF1	Insulin-like growth factor 1 (somatomedin C)

Position	UniGene	GenBank	Symbol	Description
39	N/A	XM_847792	IGFBP5	Insulin-like growth factor binding protein 5
40	Cfa.3528	NM_001003301	IL6	Interleukin 6 (interferon, beta 2)
41	N/A	XM_003435652	KLHL13	Kelch-like 13 (Drosophila)
42	Cfa.15539	NM_001242717	KLKB1	Kallikrein B, plasma (Fletcher factor) 1
43	Cfa.48635	NM_001284470	LGALS4	Lectin, galactoside-binding, soluble, 4
44	N/A	XM_005638715	LOXL1	Lysyl oxidase-like 1
45	Cfa.2796	NM_001110800	MAPK1	Mitogen-activated protein kinase 1
46	N/A	XM_005623510	MAX	MYC associated factor X
47	Cfa.3907	NM_001003376	MGMT	O-6-methylguanine-DNA methyltransferase
48	N/A	XM_014108788	MKI67	Antigen identified by monoclonal antibody Ki-67
49	N/A	XM_545946	MSX1	Msh homeobox 1
50	N/A	XM_532202	MTO1	Mitochondrial translation optimization 1 homolog (S. cerevisiae)
51	N/A	XM_003433259	NDRG3	NDRG family member 3
52	Cfa.10766	NM_001003344	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
53	N/A	XM_543240	NKX3-1	NK3 homeobox 1
54	N/A	XM_005638762	NRIP1	Nuclear receptor interacting protein 1
55	N/A	XM_003431628	PDLIM4	PDZ and LIM domain 4
56	N/A	XM_005621677	PDPK1	3-phosphoinositide dependent protein kinase-1
57	N/A	XM_543480	PES1	Pescadillo homolog 1, containing BRCT domain (zebrafish)
58	N/A	XM_014113423	PPP2R1B	Protein phosphatase 2, regulatory subunit A, beta
59	N/A	XM_543421	PRKAB1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
60	Cfa.3695	NM_001003192	PTEN	Phosphatase and tensin homolog
61	Cfa.61	NM_001003023	PTGS1	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)
62	Cfa.3449	NM_001003354	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
63	N/A	XM_003433127	RARB	Retinoic acid receptor, beta
64	N/A	XM_005632505	RASSF1	Ras association (RalGDS/AF-6) domain family member 1
65	Cfa.3598	XM_014106270	RB1	Retinoblastoma 1
66	N/A	XM_003433252	RBM39	RNA binding motif protein 39
67	N/A	XM_005636950	SCAF11	SR-related CTD-associated factor 11
68	N/A	XM_005628716	SEPTIN7	Septin 7
69	Cfa.48687	XM_003639564	SFRP1	Secreted frizzled-related protein 1
70	N/A	XM_536625	SHBG	Sex hormone-binding globulin
71	N/A	XM_539743	SLC5A8	Solute carrier family 5 (iodide transporter), member 8
72	Cfa.3905	NM_001031631	SOCS3	Suppressor of cytokine signaling 3
73	N/A	XM_005640161	SOX4	SRY (sex determining region Y)-box 4
74	Cfa.189	NM_001197083	SREBF1	Sterol regulatory element binding transcription factor 1
75	N/A	XM_542206	STK11	Serine/threonine kinase 11
76	N/A	XM_532462	TFPI2	Tissue factor pathway inhibitor 2
77	N/A	XM_005621228	TGFB1I1	Transforming growth factor beta 1 induced transcript 1
78	Cfa.3497	NM_001003082	TIMP2	TIMP metallopeptidase inhibitor 2

Position	UniGene	GenBank	Symbol	Description
79	Cfa.39892	NM_001284439	TIMP3	TIMP metallopeptidase inhibitor 3
80	N/A	XM_014109701	TMPRSS2	Transmembrane protease, serine 2
81	Cfa.3658	NM_001003210	TP53	Tumor protein p53
82	N/A	XM_543845	USP5	Ubiquitin specific peptidase 5 (isopeptidase T)
83	Cfa.3581	NM_001110502	VEGFA	Vascular endothelial growth factor A
84	N/A	XM_003435547	ZNF185	Zinc finger protein 185 (LIM domain)
85	Cfa.17735	NM_001195845	ACTB	Actin, beta
86	N/A	XM_535458	B2M	Beta-2-microglobulin
87	Cfa.36213	NM_001003142	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
88	Cfa.4551	NM_001003357	HPRT1	Hypoxanthine phosphoribosyltransferase 1
89	N/A	XM_014109387	RPLP1	Ribosomal protein, large, P1
90	N/A	SA_00130	FGDC	Dog Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	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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