

RT² Profiler™ PCR Array:

Human Growth Factors

Catalog Number

PAHS-041A

PAHS-041C

PAHS-041D

PAHS-041E

PAHS-041F

PAHS-041G

For Real-Time Instruments:

ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4 and Stratagene Mx3005p, Mx3000p

ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus

Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000

ABI 7900HT 384-Well Block

Roche LightCycler 480 96-well Block

Roche LightCycler 480 384-well Block

Description

The Human Growth Factors RT² Profiler PCR Array profiles the expression of 84 genes related to growth factors. Growth factors play a vital role in various normal biological processes such as embryogenesis, wound healing and inflammation. This array contains angiogenic growth factors and regulators of apoptosis. Genes involved in cell differentiation are included as well. Also represented are genes related to embryonic development as well as genes involved in tissue-specific development. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to the growth factors with this array.

Functional Gene Groupings

Angiogenic Growth Factors: ARTS-1, ECGF1, EREG, FGF1, FGF2, FGF6, FIGF, IL18, JAG1, PGF, TNNT1, VEGFA, VEGFC.

Apoptosis Regulators: CLC, GDNF, IL10, IL1A, IL1B, IL2, NRG2, NTF3, SPP1, TDGF1, TGFB1, VEGFA.

Cell Differentiation: ARTS-1, BMP1, BMP2, BMP3, BMP4, BMP5, BMP6, BMP7, BMP8B, CSF1, CSPG5, ECGF1, EREG, FGF1, FGF2, FGF22, FGF23, FGF6, FGF9, FIGF, IL10, IL11, IL12B, IL2, IL4, INHA, INHBA, INHBB, JAG1, JAG2, LTBP4, MDK, NRG1, OSGIN1 (OKL38), PGF, SLC01A2, SPP1, TDGF1, TNNT1, VEGFC.

Development Controllers:

Embryonic Development: BMP10, NRG1, NRG2, NRG3, TDGF1.

Nervous System Development: BDNF, CSPG5, CXCL1, FGF11, FGF13, FGF14, FGF17, FGF19, FGF2, FGF5, GDF11, GDNF, GPI, IL3, INHA, INHBA, JAG1, MDK, NDP, NRG1, NRTN, NTF3, PTN, VEGFA.

Central Nervous System Development: PDGFC, PSPN,

Muscle Development: FGF2, GDF8, HBEGF, IGF1, TNNT1.

Skeletal Development: GDF10, GDF11, IGF1, IGF2, INHA, INHBA.

Cartilage Development: BMP2, BMP3, BMP4, BMP5, BMP6, BMP7, BMP8B.

Ovarian Follicle Development: INHA, INHBA, INHBB

Others: AMH, CECR1, CSF2, CSF3, DKK1, FGF7, LEFTY1, LEFTY2, LIF, LTBP4, NGFB, NODAL, TGFB1, THPO.

Storage Conditions

Please check the kit components immediately after you receive this package. We are only responsible for missing items reported within two (2) business days of receipt.

Product Specification Sheet

Storage Conditions: PCR Arrays are shipped at ambient temperature. Keep plates at -20 °C for long-term storage.

NOTE: Be sure that you have the correct PCR Array format for your instrument before starting the experiment.

References

1. Falls DL. Neuregulins: functions, forms, and signaling strategies. *Exp Cell Res.* 2003 Mar 10; **284** (1): 14-30.
2. Yu J, Ustach C, Kim HR. Platelet-derived growth factor signaling and human cancer. *J Biochem Mol Biol.* 2003 Jan 31; **36** (1): 49-59.
3. Cross MJ, Claesson-Welsh L. FGF and VEGF function in angiogenesis: signalling pathways, biological responses and therapeutic inhibition. *Trends Pharmacol Sci.* 2001 Apr; **22** (4): 201-7.
4. Ornitz DM, Itoh N. Fibroblast growth factors. *Genome Biol.* 2001; **2** (3): REVIEWS3005.
5. Danielsen AJ, Maihle NJ. The EGF/ErbB receptor family and apoptosis. *Growth Factors.* 2002 Mar; **20** (1): 1-15.
6. Akhurst RJ, Derynck R. TGF-beta signaling in cancer--a double-edged sword. *Trends Cell Biol.* 2001 Nov; **11** (11): S44-51.
7. Lauta VM. A review of the cytokine network in multiple myeloma: diagnostic, prognostic, and therapeutic implications. *Cancer.* 2003 May 15; **97** (10): 2440-52.

Product Specification Sheet

Array Layout: Human Growth Factors PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	AMH	ARTS-1	BDNF	BMP1	BMP10	BMP2	BMP3	BMP4	BMP5	BMP6	BMP7	BMP8B
B	CECR1	CLC	CSF1	CSF2	CSF3	CSPG5	CXCL1	DKK1	ECGF1	EREG	FGF1	FGF11
C	FGF13	FGF14	FGF17	FGF19	FGF2	FGF22	FGF23	FGF5	FGF6	FGF7	FGF9	FIGF
D	GDF10	GDF11	GDF8	GDNF	GPI	HBEGF	IGF1	IGF2	IL10	IL11	IL12B	IL18
E	IL1A	IL1B	IL2	IL3	IL4	INHA	INHBA	INHBB	JAG1	JAG2	LEFTY1	LEFTY2
F	LIF	LTBP4	MDK	NDP	NGFB	NODAL	NRG1	NRG2	NRG3	NRTN	NTF3	OSGIN1
G	PDGFC	PGF	PSPN	PTN	SLCO1A2	SPP1	TDGF1	TGFB1	THPO	TNNT1	VEGFA	VEGFC
H	B2M	HPRT1	RPL13A	GAPDH	ACTB	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Hs.112432	NM_000479	AMH	Anti-Mullerian hormone
A02	Hs.436186	NM_016442	ARTS-1	Type 1 tumor necrosis factor receptor shedding aminopeptidase regulator
A03	Hs.502182	NM_001709	BDNF	Brain-derived neurotrophic factor
A04	Hs.1274	NM_006129	BMP1	Bone morphogenetic protein 1
A05	Hs.158317	NM_014482	BMP10	Bone morphogenetic protein 10
A06	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
A07	Hs.121507	NM_001201	BMP3	Bone morphogenetic protein 3 (osteogenic)
A08	Hs.68879	NM_001202	BMP4	Bone morphogenetic protein 4
A09	Hs.296648	NM_021073	BMP5	Bone morphogenetic protein 5
A10	Hs.285671	NM_001718	BMP6	Bone morphogenetic protein 6
A11	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7 (osteogenic protein 1)
A12	Hs.409964	NM_001720	BMP8B	Bone morphogenetic protein 8b (osteogenic protein 2)
B01	Hs.170310	NM_177405	CECR1	Cat eye syndrome chromosome region, candidate 1
B02	Hs.889	NM_001828	CLC	Charcot-Leyden crystal protein
B03	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B04	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
B05	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
B06	Hs.45127	NM_006574	CSPG5	Chondroitin sulfate proteoglycan 5 (neuroglycan C)
B07	Hs.789	NM_001511	CXCL1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
B08	Hs.40499	NM_012242	DKK1	Dickkopf homolog 1 (Xenopus laevis)
B09	Hs.592212	NM_001953	ECGF1	Endothelial cell growth factor 1 (platelet-derived)
B10	Hs.115263	NM_001432	EREG	Epiregulin
B11	Hs.483635	NM_000800	FGF1	Fibroblast growth factor 1 (acidic)
B12	Hs.528468	NM_004112	FGF11	Fibroblast growth factor 11
C01	Hs.6540	NM_004114	FGF13	Fibroblast growth factor 13
C02	Hs.651136	NM_004115	FGF14	Fibroblast growth factor 14
C03	Hs.248192	NM_003867	FGF17	Fibroblast growth factor 17
C04	Hs.249200	NM_005117	FGF19	Fibroblast growth factor 19
C05	Hs.284244	NM_002006	FGF2	Fibroblast growth factor 2 (basic)
C06	Hs.248087	NM_020637	FGF22	Fibroblast growth factor 22
C07	Hs.287370	NM_020638	FGF23	Fibroblast growth factor 23
C08	Hs.37055	NM_004464	FGF5	Fibroblast growth factor 5
C09	Hs.166015	NM_020996	FGF6	Fibroblast growth factor 6
C10	Hs.567268	NM_002009	FGF7	Fibroblast growth factor 7 (keratinocyte growth factor)
C11	Hs.111	NM_002010	FGF9	Fibroblast growth factor 9 (glia-activating factor)
C12	Hs.11392	NM_004469	FIGF	C-fos induced growth factor (vascular endothelial growth factor D)
D01	Hs.2171	NM_004962	GDF10	Growth differentiation factor 10
D02	Hs.643604	NM_005811	GDF11	Growth differentiation factor 11
D03	Hs.41565	NM_005259	GDF8	Growth differentiation factor 8
D04	Hs.248114	NM_000514	GDNF	Glial cell derived neurotrophic factor
D05	Hs.466471	NM_000175	GPI	Glucose phosphate isomerase
D06	Hs.799	NM_001945	HBEGF	Heparin-binding EGF-like growth factor

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Position	UniGene	GenBank	Symbol	Description
D07	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)
D08	Hs.523414	NM_000612	IGF2	Insulin-like growth factor 2 (somatomedin A)
D09	Hs.193717	NM_000572	IL10	Interleukin 10
D10	Hs.467304	NM_000641	IL11	Interleukin 11
D11	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
D12	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
E01	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
E02	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
E03	Hs.89679	NM_000586	IL2	Interleukin 2
E04	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
E05	Hs.73917	NM_000589	IL4	Interleukin 4
E06	Hs.407506	NM_002191	INH1A	Inhibin, alpha
E07	Hs.583348	NM_002192	INH1B	Inhibin, beta A (activin A, activin AB alpha polypeptide)
E08	Hs.1735	NM_002193	INH1C	Inhibin, beta B (activin AB beta polypeptide)
E09	Hs.224012	NM_000214	JAG1	Jagged 1 (Alagille syndrome)
E10	Hs.433445	NM_002226	JAG2	Jagged 2
E11	Hs.278239	NM_020997	LEFTY1	Left-right determination factor 1
E12	Hs.520187	NM_003240	LEFTY2	Left-right determination factor 2
F01	Hs.2250	NM_002309	LIF	Leukemia inhibitory factor (cholinergic differentiation factor)
F02	Hs.466766	NM_003573	LTBP4	Latent transforming growth factor beta binding protein 4
F03	Hs.82045	NM_002391	MDK	Midkine (neurite growth-promoting factor 2)
F04	Hs.522615	NM_000266	NDP	Norrie disease (pseudoglioma)
F05	Hs.2561	NM_002506	NGFB	Nerve growth factor, beta polypeptide
F06	Hs.370414	NM_018055	NODAL	Nodal homolog (mouse)
F07	Hs.453951	NM_013957	NRG1	Neuregulin 1
F08	Hs.408515	NM_013982	NRG2	Neuregulin 2
F09	Hs.125119	NM_001010848	NRG3	Neuregulin 3
F10	Hs.234775	NM_004558	NRTN	Neurturin
F11	Hs.99171	NM_002527	NTF3	Neurotrophin 3
F12	Hs.128055	NM_182981	OSGIN1	Oxidative stress induced growth inhibitor 1
G01	Hs.570855	NM_016205	PDGFC	Platelet derived growth factor C
G02	Hs.252820	NM_002632	PGF	Placental growth factor, vascular endothelial growth factor-related protein
G03	Hs.248159	NM_004158	PSPN	Persephin
G04	Hs.371249	NM_002825	PTN	Pleiotrophin (heparin binding growth factor 8, neurite growth-promoting factor 1)
G05	Hs.46440	NM_005075	SLCO1A2	Solute carrier organic anion transporter family, member 1A2
G06	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T-lymphocyte activation)
G07	Hs.385870	NM_003212	TDGF1	Teratocarcinoma-derived growth factor 1
G08	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G09	Hs.1166	NM_000460	THPO	Thrombopoietin (myeloproliferative leukemia virus oncogene ligand, megakaryocyte growth and development factor)
G10	Hs.631558	NM_003283	TNNT1	Troponin T type 1 (skeletal, slow)
G11	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G12	Hs.435215	NM_005429	VEGFC	Vascular endothelial growth factor C
H01	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H02	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)
H03	Hs.546356	NM_012423	RPL13A	Ribosomal protein L13a
H04	Hs.544577	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H05	Hs.520640	NM_001101	ACTB	Actin, beta
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