

RT² Profiler™ PCR Array:

Human HIV Infection and Host Response

Catalog Number

PAHS-051A

PAHS-051C

PAHS-051D

PAHS-051E

PAHS-051F

PAHS-051G

For Real-Time Instruments:

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

Roche LightCycler 480 384-well Blocks

Description

The Human HIV Infection and Host Response RT² Profiler™ PCR Array profiles the expression of 84 genes involved in the host response to HIV Infection. This array represents the genes involved in innate and adaptive immunity related to HIV infection along with the key cellular cofactors for HIV replication. The host genes involved in HIV viral processes such as binding, fusion, uncoating, reverse transcription, nuclear import, integration, transcription, RNA export, assembly and budding are included on this array. The array also represents the host response to HIV infection with key genes involved in HIV innate response and host genes involved in HIV immune evasion. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to HIV infection and host response with this array.

Functional Gene Groupings**HIV Receptors and Natural Ligands:** CCL2, CCL4, CCL5, CCR5, CD4, CXCL12, CXCR4.**Cellular Cofactors Involved in HIV Infection:**Chemokine Receptors: CCR2, CCR3, CCR4.G-protein Coupled Receptors: CCR2, CCR3, CCR4.Protein Kinases: CDK7, CDK9, HCK, PTK2B.Transcription Factors and Regulators: APEX1, BCL11B, CCNT1, CDK7, CDK9, CREBBP, EP300, HMGA1, HTATSF1, NFATC1, RBL2, SMARCB1, TFPC2, TSG101, YY1.Apoptosis Genes: EP300, LTBR, PTK2B.Cell Cycle Regulators: CCNT1, CDK7, CDK9, EP300, RBL2, SMARCB1.Genes Regulating Cell Proliferation: CDK7, CDK9, PTK2B.Inflammatory Response: CCR2, CCR3, CCR4.Antimicrobial Humoral Response: CCR2, YY1.Other Immune Response Genes: APOBEC3G, CD209, LTBR.Genes Involved in Cell Adhesion: CCR3, CD209, PTK2B.Viral Genome Replication: APOBEC3G, CD209, HTATSF1.Other Cellular Cofactors: APOBEC3F, BANF1, BTRC, CBX5, CD247 (CD3Z), COPS6, ELA2, PPIA, TRIM5, VPS4A, XPO1.**Genes Involved in Innate Immune Response:**Acute-phase Response: SERPINA1.Antimicrobial Humoral Response: IL12B, IL1B, KLRD1, XCL1.Response to Virus: CCL4, CCL5, CCL8, CXCL12, IFNB1, TNF.Response to Pest, Pathogen or Parasite: CCL2, TNF.

Product Specification Sheet

Inflammatory Response: CCL2, CCL4, CCL5, CCL8, CXCL12, IL10, IL1B, IL8, TNF.

Other Genes Involved in the Immune Response: CD74, CR2, CX3CL1, IFNG, IL16, IL2, MBL2.

Natural Killer Cell Activation: IFNB1, IL12B, IL2.

Defense Response Against Pathogens: CD69, CX3CL1, IFNA1, IFNB1, IFNG.

Genes Involved in Cell Adhesion: CCL2, CCL4, CCL5, CD44, CX3CL1, CXCL12, IL8, SELL, TNF.

Other Genes Involved in the Innate Response: PRDX1, SERPINC1, SLPI, TGFB1, TNFRSF1B.

Immune Evasion: CD4, FCAR, MAP3K5.

Cellular Proteins Induced or Activated by HIV Infection:

Apoptosis: BAD, BAX, BCL2, CASP3, CASP8, CDKN1A, GADD45A, NFKBIA, STAT1, TNFSF10.

Cell Cycle Regulators: BAX, BCL2, CDK9, CDKN1A, GADD45A, IRF1, STAT1.

Regulators of Cell Proliferation: BCL2, CDK9, CDKN1A, IRF2.

Transcription Factors and Regulators: CDK9, CEBPB, FOS, IRF1, IRF2, NFATC1, NFKBIA, STAT1, STAT3.

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.

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. Stevenson, M., *HIV-1 pathogenesis*. Nat Med, 2003. **9**(7): p. 853-60.
2. Peterlin, B.M. and D. Trono, *Hide, shield and strike back: how HIV-infected cells avoid immune eradication*. Nat Rev Immunol, 2003. **3**(2): p. 97-107.
3. Piguet, V. and D. Trono, *Living in oblivion: HIV immune evasion*. Semin Immunol, 2001. **13**(1): p. 51-7.
4. Chen, H. and A. Engelman, *The barrier-to-autointegration protein is a host factor for HIV type 1 integration*. Proc Natl Acad Sci U S A, 1998. **95**(26): p. 15270-4.
5. Landau, N.R., *A cellular cofactor in HIV-1 assembly: INI1 is also an "outtie"*. Trends Pharmacol Sci, 2002. **23**(6): p. 252-3.
6. Stremlau, M., et al., *The cytoplasmic body component TRIM5alpha restricts HIV-1 infection in Old World monkeys*. Nature, 2004. **427**(6977): p. 848-53.

Product Specification Sheet

Array Layout: Human HIV Infection and Host Response RT² Profiler™ PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	APEX1	APOBEC3F	APOBEC3G	BAD	BANF1	BAX	BCL11B	BCL2	BTRC	CASP3	CASP8	CBX5
B	CCL2	CCL4	CCL5	CCL8	CCNT1	CCR2	CCR3	CCR4	CCR5	CD209	CD247	CD4
C	CD44	CD69	CD74	CDK7	CDK9	CDKN1A	CEBPB	COPS6	CR2	CREBBP	CX3CL1	CXCL12
D	CXCR4	ELA2	EP300	FCAR	FOS	GADD45A	HCK	HMGA1	HTATSF1	IFNA1	IFNB1	IFNG
E	IL10	IL12B	IL16	IL1B	IL2	IL8	IRF1	IRF2	KLRD1	LTBR	MAP3K5	MBL2
F	NFATC1	NFKBIA	PPIA	PRDX1	PTK2B	RBL2	SELL	SERPINA1	SERPINC1	SLPI	SMARCB1	STAT1
G	STAT3	TFCP2	TGFB1	TNF	TNFRSF1B	TNFSF10	TRIM5	TSG101	VPS4A	XCL1	XPO1	YY1
H	B2M	HPRT1	RPL13A	GAPDH	ACTB	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Hs.73722	NM_080649	APEX1	APEX nuclease (multifunctional DNA repair enzyme) 1
A02	Hs.337667	NM_145298	APOBEC3F	Apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3F
A03	Hs.474853	NM_021822	APOBEC3G	Apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3G
A04	Hs.370254	NM_004322	BAD	BCL2-antagonist of cell death
A05	Hs.433759	NM_003860	BANF1	Barrier to autointegration factor 1
A06	Hs.159428	NM_004324	BAX	BCL2-associated X protein
A07	Hs.652306	NM_022898	BCL11B	B-cell CLL/lymphoma 11B (zinc finger protein)
A08	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A09	Hs.643802	NM_033637	BTRC	Beta-transducin repeat containing
A10	Hs.141125	NM_004346	CASP3	Caspase 3, apoptosis-related cysteine peptidase
A11	Hs.591630	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
A12	Hs.632724	NM_012117	CBX5	Chromobox homolog 5 (HP1 alpha homolog, Drosophila)
B01	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
B02	Hs.75703	NM_002984	CCL4	Chemokine (C-C motif) ligand 4
B03	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
B04	Hs.652137	NM_005623	CCL8	Chemokine (C-C motif) ligand 8
B05	Hs.279906	NM_001240	CCNT1	Cyclin T1
B06	Hs.644637	NM_000648	CCR2	Chemokine (C-C motif) receptor 2
B07	Hs.506190	NM_001837	CCR3	Chemokine (C-C motif) receptor 3
B08	Hs.184926	NM_005508	CCR4	Chemokine (C-C motif) receptor 4
B09	Hs.450802	NM_000579	CCR5	Chemokine (C-C motif) receptor 5
B10	Hs.278694	NM_021155	CD209	CD209 molecule
B11	Hs.156445	NM_000734	CD247	CD247 molecule
B12	Hs.631659	NM_000616	CD4	CD4 molecule
C01	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
C02	Hs.208854	NM_001781	CD69	CD69 molecule
C03	Hs.436568	NM_004355	CD74	CD74 molecule, major histocompatibility complex, class II invariant chain
C04	Hs.184298	NM_001799	CDK7	Cyclin-dependent kinase 7 (MO15 homolog, Xenopus laevis, cdk-activating kinase)
C05	Hs.557646	NM_001261	CDK9	Cyclin-dependent kinase 9 (CDC2-related kinase)
C06	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
C07	Hs.517106	NM_005194	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
C08	Hs.15591	NM_006833	COPS6	COP9 constitutive photomorphogenic homolog subunit 6 (Arabidopsis)
C09	Hs.445757	NM_001877	CR2	Complement component (3d/Epstein Barr virus) receptor 2
C10	Hs.459759	NM_004380	CREBBP	CREB binding protein (Rubinstein-Taybi syndrome)
C11	Hs.531668	NM_002996	CX3CL1	Chemokine (C-X3-C motif) ligand 1
C12	Hs.522891	NM_000609	CXCL12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
D01	Hs.593413	NM_003467	CXCR4	Chemokine (C-X-C motif) receptor 4
D02	Hs.99863	NM_001972	ELA2	Elastase 2, neutrophil
D03	Hs.517517	NM_001429	EP300	E1A binding protein p300
D04	Hs.631534	NM_002000	FCAR	Fc fragment of IgA, receptor for
D05	Hs.25647	NM_005252	FOS	V-fos FBJ murine osteosarcoma viral oncogene homolog
D06	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
D07	Hs.126521	NM_002110	HCK	Hemopoietic cell kinase
D08	Hs.518805	NM_145904	HMGA1	High mobility group AT-hook 1
D09	Hs.204475	NM_014500	HTATSF1	HIV-1 Tat specific factor 1
D10	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
D11	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast
D12	Hs.856	NM_000619	IFNG	Interferon, gamma
E01	Hs.193717	NM_000572	IL10	Interleukin 10
E02	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
E03	Hs.459095	NM_004513	IL16	Interleukin 16 (lymphocyte chemoattractant factor)

Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description
E04	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
E05	Hs.89679	NM_000586	IL2	Interleukin 2
E06	Hs.624	NM_000584	IL8	Interleukin 8
E07	Hs.436061	NM_002198	IRF1	Interferon regulatory factor 1
E08	Hs.374097	NM_002199	IRF2	Interferon regulatory factor 2
E09	Hs.562457	NM_002262	KLRD1	Killer cell lectin-like receptor subfamily D, member 1
E10	Hs.1116	NM_002342	LTBR	Lymphotoxin beta receptor (TNFR superfamily, member 3)
E11	Hs.186486	NM_005923	MAP3K5	Mitogen-activated protein kinase kinase kinase 5
E12	Hs.499674	NM_000242	MBL2	Mannose-binding lectin (protein C) 2, soluble (opsonic defect)
F01	Hs.534074	NM_172390	NFATC1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
F02	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
F03	Hs.356331	NM_021130	PPIA	Peptidylprolyl isomerase A (cyclophilin A)
F04	Hs.180909	NM_002574	PRDX1	Peroxisredoxin 1
F05	Hs.491322	NM_004103	PTK2B	PTK2B protein tyrosine kinase 2 beta
F06	Hs.513609	NM_005611	RBL2	Retinoblastoma-like 2 (p130)
F07	Hs.82848	NM_000655	SELL	Selectin L (lymphocyte adhesion molecule 1)
F08	Hs.525557	NM_000295	SERPINA1	Serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
F09	Hs.75599	NM_000488	SERPINC1	Serpin peptidase inhibitor, clade C (antithrombin), member 1
F10	Hs.517070	NM_003064	SLPI	Secretory leukocyte peptidase inhibitor
F11	Hs.534350	NM_003073	SMARCB1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1
F12	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
G01	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G02	Hs.653272	NM_005653	TFCP2	Transcription factor CP2
G03	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G04	Hs.241570	NM_000594	TNF	Tumor necrosis factor (TNF superfamily, member 2)
G05	Hs.256278	NM_001066	TNFRSF1B	Tumor necrosis factor receptor superfamily, member 1B
G06	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G07	Hs.370515	NM_033093	TRIM5	Tripartite motif-containing 5
G08	Hs.523512	NM_006292	TSG101	Tumor susceptibility gene 101
G09	Hs.128420	NM_013245	VPS4A	Vacuolar protein sorting 4 homolog A (S. cerevisiae)
G10	Hs.546295	NM_002995	XCL1	Chemokine (C motif) ligand 1
G11	Hs.370770	NM_003400	XPO1	Exportin 1 (CRM1 homolog, yeast)
G12	Hs.388927	NM_003403	YY1	YY1 transcription factor
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