

RT² Profiler™ PCR Array:

Human Heat Shock Proteins

Catalog Number

PAHS-076A

PAHS-076C

PAHS-076D

PAHS-076E

PAHS-076F

PAHS-076G

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 Blocks

Roche LightCycler 480 384-well Blocks

Description

The Human Heat Shock Proteins RT² Profiler PCR Array profiles the expression of 84 Heat Shock Protein genes that regulate protein folding. Heat shock proteins (HSPs, or molecular chaperones) are important components of cellular networks. HSPs can either aid in the folding and maintenance of newly translated proteins or they can lead to the degradation of misfolded and destabilized proteins. Included on this PCR Array are HSP90 (81 to 99 kD), HSP70 (65 to 80 kD), HSP60 (55 to 64 kD), HSP40 (35 to 54 kD), small HSPs (≤ 34 kD) and other chaperone cofactors that are directly involved in the response to unfolded/misfolded proteins or that are involved in protein folding in general. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of heat shock proteins and chaperones with this array.

Functional Gene Groupings

HSP90 Family Members: HSP90AA1, HSP90AB1, HSP90B1.

HSP70 Family Members: HSPA14, HSPA1A, HSPA1B, HSPA1L, HSPA2, HSPA4, HSPA4L, HSPA5, HSPA8, HSPA9.

HSP60 Family Members: HSPD1.

HSP40 Family Members: DNAJA1, DNAJA2, DNAJA3, DNAJA4, DNAJA5, DNAJB1, DNAJB11, DNAJB12, DNAJB13, DNAJB14, DNAJB2, DNAJB5, DNAJB6, DNAJB7, DNAJB8, DNAJB9, DNAJC1, DNAJC10, DNAJC11, DNAJC12, DNAJC13, DNAJC14, DNAJC15, DNAJC16, DNAJC17, DNAJC18, DNAJC19, DNAJC3, DNAJC4, DNAJC5, DNAJC5B, DNAJC5G, DNAJC6, DNAJC7, DNAJC8, DNAJC9, SERPINH1.

Small HSPs: HSPB1, HSPB2, HSPB3, HSPB6, HSPB7, HSPB8, HSPE1.

Other Regulators of Protein Folding: ATF6, BAG1, BAG2, BAG3, BAG4, BAG5, CAB31, CCS, CCT2, CCT3, CCT4, CCT5, CCT6A, CCT6B, CCT7, CRYAA, CRYAB, HSF1, HSF2, HSF4, HSPH1, PFDN1, PFDN2, SIL1, TCP1, TOR1A.

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. Bukau B, Horwich AL. 1998. The Hsp70 and Hsp60 Chaperone Machines. *Cell* 92: 351-66
2. Calderwood SK, Khaleque MA, Sawyer DB, Ciocca DR. 2006. Heat shock proteins in cancer: chaperones of tumorigenesis. *Trends in Biochemical Sciences* 31: 164-72
3. Macario AJL, de Macario EC. 2005. Sick Chaperones, Cellular Stress, and Disease. *N Engl J Med* 353: 1489-501
4. Nardai G, Vegh EM, Prohaszka Z, Csermely P. 2006. Chaperone-related immune dysfunction: an emergent property of distorted chaperone networks. *Trends in Immunology* 27: 74-9
5. Soti C, Pal C, Papp B, Csermely P. 2005. Molecular chaperones as regulatory elements of cellular networks. *Current Opinion in Cell Biology* 17: 210-5
6. Sreedhar AS, Csermely P. 2004. Heat shock proteins in the regulation of apoptosis: new strategies in tumor therapy: A comprehensive review. *Pharmacology & Therapeutics* 101: 227-57

Product Specification Sheet

Array Layout:

Human Heat Shock Proteins RT² Profiler™ PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	ATF6	BAG1	BAG2	BAG3	BAG4	BAG5	CABC1	CCS	CCT2	CCT3	CCT4	CCT5
B	CCT6A	CCT6B	CCT7	CRYAA	CRYAB	DNAJA1	DNAJA2	DNAJA3	DNAJA4	DNAJA5	DNAJB1	DNAJB11
C	DNAJB12	DNAJB13	DNAJB14	DNAJB2	DNAJB5	DNAJB6	DNAJB7	DNAJB8	DNAJB9	DNAJC1	DNAJC10	DNAJC11
D	DNAJC12	DNAJC13	DNAJC14	DNAJC15	DNAJC16	DNAJC17	DNAJC18	DNAJC19	DNAJC3	DNAJC4	DNAJC5	DNAJC5B
E	DNAJC5G	DNAJC6	DNAJC7	DNAJC8	DNAJC9	HSF1	HSF2	HSF4	HSP90AA1	HSP90AB1	HSP90B1	HSPA14
F	HSPA1A	HSPA1B	HSPA1L	HSPA2	HSPA4	HSPA4L	HSPA5	HSPA8	HSPA9	HSPB1	HSPB2	HSPB3
G	HSPB6	HSPB7	HSPB8	HSPD1	HSPE1	HSPH1	PFDN1	PFDN2	SERPINH1	SIL1	TCP1	TOR1A
H	B2M	HPRT1	RPL13A	GAPDH	ACTB	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Hs.492740	NM_007348	ATF6	Activating transcription factor 6
A02	Hs.377484	NM_004323	BAG1	BCL2-associated athanogene
A03	Hs.55220	NM_004282	BAG2	BCL2-associated athanogene 2
A04	Hs.523309	NM_004281	BAG3	BCL2-associated athanogene 3
A05	Hs.194726	NM_004874	BAG4	BCL2-associated athanogene 4
A06	Hs.5443	NM_004873	BAG5	BCL2-associated athanogene 5
A07	Hs.118241	NM_020247	CABC1	Chaperone, ABC1 activity of bc1 complex homolog (S. pombe)
A08	Hs.502917	NM_005125	CCS	Copper chaperone for superoxide dismutase
A09	Hs.189772	NM_006431	CCT2	Chaperonin containing TCP1, subunit 2 (beta)
A10	Hs.491494	NM_005998	CCT3	Chaperonin containing TCP1, subunit 3 (gamma)
A11	Hs.421509	NM_006430	CCT4	Chaperonin containing TCP1, subunit 4 (delta)
A12	Hs.1600	NM_012073	CCT5	Chaperonin containing TCP1, subunit 5 (epsilon)
B01	Hs.82916	NM_001762	CCT6A	Chaperonin containing TCP1, subunit 6A (zeta 1)
B02	Hs.73072	NM_006584	CCT6B	Chaperonin containing TCP1, subunit 6B (zeta 2)
B03	Hs.368149	NM_006429	CCT7	Chaperonin containing TCP1, subunit 7 (eta)
B04	Hs.184085	NM_000394	CRYAA	Crystallin, alpha A
B05	Hs.408767	NM_001885	CRYAB	Crystallin, alpha B
B06	Hs.445203	NM_001539	DNAJA1	DnaJ (Hsp40) homolog, subfamily A, member 1
B07	Hs.368078	NM_005880	DNAJA2	DnaJ (Hsp40) homolog, subfamily A, member 2
B08	Hs.459779	NM_005147	DNAJA3	DnaJ (Hsp40) homolog, subfamily A, member 3
B09	Hs.513053	NM_018602	DNAJA4	DnaJ (Hsp40) homolog, subfamily A, member 4
B10	Hs.131887	NM_194283	DNAJA5	DnaJ homology subfamily A member 5
B11	Hs.515210	NM_006145	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1
B12	Hs.317192	NM_016306	DNAJB11	DnaJ (Hsp40) homolog, subfamily B, member 11
C01	Hs.653143	NM_017626	DNAJB12	DnaJ (Hsp40) homolog, subfamily B, member 12
C02	Hs.567888	NM_153614	DNAJB13	DnaJ (Hsp40) related, subfamily B, member 13
C03	Hs.577426	NM_024920	DNAJB14	DnaJ (Hsp40) homolog, subfamily B, member 14
C04	Hs.77768	NM_006736	DNAJB2	DnaJ (Hsp40) homolog, subfamily B, member 2
C05	Hs.237506	NM_012266	DNAJB5	DnaJ (Hsp40) homolog, subfamily B, member 5
C06	Hs.490745	NM_005494	DNAJB6	DnaJ (Hsp40) homolog, subfamily B, member 6
C07	Hs.585042	NM_145174	DNAJB7	DnaJ (Hsp40) homolog, subfamily B, member 7
C08	Hs.518241	NM_153330	DNAJB8	DnaJ (Hsp40) homolog, subfamily B, member 8
C09	Hs.6790	NM_012328	DNAJB9	DnaJ (Hsp40) homolog, subfamily B, member 9
C10	Hs.499000	NM_022365	DNAJC1	DnaJ (Hsp40) homolog, subfamily C, member 1
C11	Hs.516632	NM_018981	DNAJC10	DnaJ (Hsp40) homolog, subfamily C, member 10
C12	Hs.462640	NM_018198	DNAJC11	DnaJ (Hsp40) homolog, subfamily C, member 11
D01	Hs.260720	NM_201262	DNAJC12	DnaJ (Hsp40) homolog, subfamily C, member 12
D02	Hs.12707	NM_015268	DNAJC13	DnaJ (Hsp40) homolog, subfamily C, member 13
D03	Hs.253844	NM_032364	DNAJC14	DnaJ (Hsp40) homolog, subfamily C, member 14
D04	Hs.438830	NM_013238	DNAJC15	DnaJ (Hsp40) homolog, subfamily C, member 15
D05	Hs.461532	NM_015291	DNAJC16	DnaJ (Hsp40) homolog, subfamily C, member 16
D06	Hs.511069	NM_018163	DNAJC17	DnaJ (Hsp40) homolog, subfamily C, member 17
D07	Hs.483537	NM_152686	DNAJC18	DnaJ (Hsp40) homolog, subfamily C, member 18
D08	Hs.230601	NM_201259	DNAJC19	DnaJ (Hsp40) homolog, subfamily C, member 19
D09	Hs.591209	NM_006260	DNAJC3	DnaJ (Hsp40) homolog, subfamily C, member 3
D10	Hs.172847	NM_005528	DNAJC4	DnaJ (Hsp40) homolog, subfamily C, member 4
D11	Hs.164419	NM_025219	DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5
D12	Hs.491885	NM_033105	DNAJC5B	DnaJ (Hsp40) homolog, subfamily C, member 5 beta
E01	Hs.116303	NM_173650	DNAJC5G	DnaJ (Hsp40) homolog, subfamily C, member 5 gamma
E02	Hs.647643	NM_014787	DNAJC6	DnaJ (Hsp40) homolog, subfamily C, member 6

Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description
E03	Hs.500156	NM_003315	DNAJC7	DnaJ (Hsp40) homolog, subfamily C, member 7
E04	Hs.433540	NM_014280	DNAJC8	DnaJ (Hsp40) homolog, subfamily C, member 8
E05	Hs.408577	NM_015190	DNAJC9	DnaJ (Hsp40) homolog, subfamily C, member 9
E06	Hs.530227	NM_005526	HSF1	Heat shock transcription factor 1
E07	Hs.158195	NM_004506	HSF2	Heat shock transcription factor 2
E08	Hs.512156	NM_001538	HSF4	Heat shock transcription factor 4
E09	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
E10	Hs.509736	NM_007355	HSP90AB1	Heat shock protein 90kDa alpha (cytosolic), class B member 1
E11	Hs.192374	NM_003299	HSP90B1	Heat shock protein 90kDa beta (Grp94), member 1
E12	Hs.534169	NM_016299	HSPA14	Heat shock 70kDa protein 14
F01	Hs.520028	NM_005345	HSPA1A	Heat shock 70kDa protein 1A
F02	Hs.274402	NM_005346	HSPA1B	Heat shock 70kDa protein 1B
F03	Hs.558337	NM_005527	HSPA1L	Heat shock 70kDa protein 1-like
F04	Hs.432648	NM_021979	HSPA2	Heat shock 70kDa protein 2
F05	Hs.90093	NM_002154	HSPA4	Heat shock 70kDa protein 4
F06	Hs.135554	NM_014278	HSPA4L	Heat shock 70kDa protein 4-like
F07	Hs.605502	NM_005347	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
F08	Hs.180414	NM_006597	HSPA8	Heat shock 70kDa protein 8
F09	Hs.184233	NM_004134	HSPA9	Heat shock 70kDa protein 9 (mortalin)
F10	Hs.520973	NM_001540	HSPB1	Heat shock 27kDa protein 1
F11	Hs.78846	NM_001541	HSPB2	Heat shock 27kDa protein 2
F12	Hs.41707	NM_006308	HSPB3	Heat shock 27kDa protein 3
G01	Hs.534538	NM_144617	HSPB6	Heat shock protein, alpha-crystallin-related, B6
G02	Hs.502612	NM_014424	HSPB7	Heat shock 27kDa protein family, member 7 (cardiovascular)
G03	Hs.400095	NM_014365	HSPB8	Heat shock 22kDa protein 8
G04	Hs.595053	NM_002156	HSPD1	Heat shock 60kDa protein 1 (chaperonin)
G05	Hs.1197	NM_002157	HSPE1	Heat shock 10kDa protein 1 (chaperonin 10)
G06	Hs.36927	NM_006644	HSPH1	Heat shock 105kDa/110kDa protein 1
G07	Hs.483564	NM_002622	PFDN1	Prefoldin subunit 1
G08	Hs.492516	NM_012394	PFDN2	Prefoldin subunit 2
G09	Hs.596449	NM_001235	SERPINH1	Serpin peptidase inhibitor, clade H (heat shock protein 47), member 1, (collagen binding protein 1)
G10	Hs.483521	NM_022464	SIL1	SIL1 homolog, endoplasmic reticulum chaperone (S. cerevisiae)
G11	Hs.487054	NM_030752	TCP1	T-complex 1
G12	Hs.534312	NM_000113	TOR1A	Torsin family 1, member A (torsin A)
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