

RT² Profiler™ PCR Array:

Human Alzheimer's Disease

Catalog Number

PAHS-057A

PAHS-057C

PAHS-057D

PAHS-057E

PAHS-057F

PAHS-057G

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 Alzheimer's Disease RT² Profiler™ PCR Array profiles the expression of 84 genes important in the onset, development, and progression of Alzheimer's disease. The array includes genes that contribute to amyloid beta-peptide (A β) generation, clearance, and degradation, as well as genes involved in amyloid beta-peptide (A β) signal transduction leading to neuronal toxicity and inflammation. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to Alzheimer's Disease with this array.

Functional Gene Groupings**Beta-amyloid Generation, Oligomerization, Clearance, and Degradation:**Secretases: ADAM9, A β 1A, BACE1, BACE2, CTSB, NCSTN, PSEN1, PSEN2.Other Peptidases Involved in Beta-amyloid Degradation: IDE, PLAT, PLA α , PLG.Beta-amyloid Clearance Through Endocytosis: APLP1, APP, LRP1, LRP6, LRP8.Other Genes Involved in Beta-amyloid Metabolism: A2M, ACHE, APBB1, APBB2, APOE, BCHE, UBQLN1.**Microtubule and Cytoskeleton Reorganization:** APOE, MAP2, MAPT, PKP4, PRKCI.**Synaptic Formation:**Synaptic Transmission: APBA1, APOE, CHAT.Other Synaptic Functions: ACHE, APBA1, APBB1, APBB2, APOE, BDNF.**Cholesterol Metabolism:** ABCA1, APOA1, APOE, LRP8.**Lipid and Lipoprotein Metabolism:** APOA1, APOE, CLU, HADH2, INS, LPL, LRP1, LRP8, SNCB.**Hormone and Hormone Processing:** BACE2, INS.**Apoptosis:**Induction of Apoptosis: APOE, CASP3, CASP4, ERN1, PRKCA, PRKCE.Anti-apoptosis: IL1A, MPO, PRKCZ, PSEN1, SNCA.Other Genes Involved in Apoptosis and Cell Death: APLP1, APP, APPBP1, CLU, EP300, MAPT, PSEN2.**Cell Cycle Regulators:**Cell Cycle Arrest: APBB1, APBB2, ERN1.Other Cell Cycle Genes: APBB1, APBB2, APPBP1, CDC2, CDK5, CDKL1, EP300, IL1A, PRKCA.**Protein Kinases:** CDC2, CDK5, CDKL1, ERN1, GSK3A, GSK3B, INSR, PRKCA, PRKCB1, PRKCD, PRKCE, PRKCG, PRKCI, PRKCQ, PRKCZ.

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Cell Signaling Molecules:

Wnt Receptor Signaling: GSK3B, LRP6.

Notch Signaling: APH1A, NCSTN, PSEN1, PSEN2.

G-protein Coupled Receptor (Protein Signaling): APLP2, GNAO1, GNAZ, GNB1, GNB4, GNB5, GNG10, GNG11, GNG3, GNG4, GNG5, GNG7, GNG8, GNGT1, GNGT2.

Intracellular Signaling: APBA3, APBB2, PRKCA, PRKCB1, PRKCD, PRKCE, PRKCG, PRKCI, PRKCQ, PRKCZ, PSEN1, PSEN2.

Other Signaling Molecules: APPBP1, GAP43, GNB2, IDE, IL1A, INSR, PLAU.

Transcription regulators: APBB1, APBB2, EP300, ERN1.

Other Genes Involved in Alzheimer's disease:

Oxidoreductases and Oxidative Stress: HADH2, MPO, UQCRC1, UQCRC2.

Proteases: CTSC, CTSD, CTSG, CTSL, UQCRC2.

Protease Inhibitors: APLP2, APP, SERPINA3.

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. Tanzi, R.E. and Bertram, L. (2005) *Cell*, **120**, 545-555.
2. Fuentelba, R.A., Farias, G., Scheu, J., Bronfman, M., Marzolo, M.P. and Inestrosa, N.C. (2004) *Brain Research Reviews*, **47**, 275-289.
3. The Ronald and Nancy Reagan Research Institute of the Alzheimer's Association and, N.I.o.A.W.G. (1998) *Neurobiology of Aging*, **19**, 109-116.
4. Bertram, L. and Tanzi, R.E. (2004) *Hum. Mol. Genet.*, ddh077.

Product Specification Sheet

Array Layout: Human Alzheimer's Disease RT² Profiler™ PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	A2M	ABCA1	ACHE	ADAM9	APBA1	APBA3	APBB1	APBB2	APH1A	APLP1	APLP2	APOA1
B	APOE	APP	APPBP1	BACE1	BACE2	BCHE	BDNF	CASP3	CASP4	CDC2	CDK5	CDKL1
C	CHAT	CLU	CTSB	CTSC	CTSD	CTSG	CTSL1	EP300	ERN1	GAP43	GNAO1	GNAZ
D	GNB1	GNB2	GNB4	GNB5	GNG10	GNG11	GNG3	GNG4	GNG5	GNG7	GNG8	GNGT1
E	GNGT2	GSK3A	GSK3B	HSD17B10	IDE	IL1A	INS	INSR	LPL	LRP1	LRP6	LRP8
F	MAP2	MAPT	MPO	NCSTN	PKP4	PLAT	PLAU	PLG	PRKCA	PRKCB1	PRKCD	PRKCE
G	PRKCG	PRKCI	PRKCQ	PRKCZ	PSEN1	PSEN2	SERPINA3	SNCA	SNCB	UBQLN1	UQCRC1	UQCRC2
H	B2M	HPRT1	RPL13A	GAPDH	ACTB	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Hs.212838	NM_000014	A2M	Alpha-2-macroglobulin
A02	Hs.429294	NM_005502	ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1
A03	Hs.154495	NM_000665	ACHE	Acetylcholinesterase (YT blood group)
A04	Hs.591852	NM_003816	ADAM9	ADAM metallopeptidase domain 9 (meltrin gamma)
A05	Hs.592974	NM_001163	APBA1	Amyloid beta (A4) precursor protein-binding, family A, member 1 (X11)
A06	Hs.465607	NM_004886	APBA3	Amyloid beta (A4) precursor protein-binding, family A, member 3 (X11-like 2)
A07	Hs.372840	NM_001164	APBB1	Amyloid beta (A4) precursor protein-binding, family B, member 1 (Fe65)
A08	Hs.479602	NM_173075	APBB2	Amyloid beta (A4) precursor protein-binding, family B, member 2 (Fe65-like)
A09	Hs.108408	NM_016022	APH1A	Anterior pharynx defective 1 homolog A (C. elegans)
A10	Hs.74565	NM_005166	APLP1	Amyloid beta (A4) precursor-like protein 1
A11	Hs.370247	NM_001642	APLP2	Amyloid beta (A4) precursor-like protein 2
A12	Hs.633003	NM_000039	APOA1	Apolipoprotein A-I
B01	Hs.515465	NM_000041	APOE	Apolipoprotein E
B02	Hs.434980	NM_000484	APP	Amyloid beta (A4) precursor protein (peptidase nexin-II, Alzheimer disease)
B03	Hs.460978	NM_003905	APPBP1	Amyloid beta precursor protein binding protein 1
B04	Hs.504003	NM_138973	BACE1	Beta-site APP-cleaving enzyme 1
B05	Hs.529408	NM_012105	BACE2	Beta-site APP-cleaving enzyme 2
B06	Hs.420483	NM_000055	BCHE	Butyrylcholinesterase
B07	Hs.502182	NM_001709	BDNF	Brain-derived neurotrophic factor
B08	Hs.141125	NM_004346	CASP3	Caspase 3, apoptosis-related cysteine peptidase
B09	Hs.138378	NM_001225	CASP4	Caspase 4, apoptosis-related cysteine peptidase
B10	Hs.334562	NM_001786	CDC2	Cell division cycle 2, G1 to S and G2 to M
B11	Hs.647078	NM_004935	CDK5	Cyclin-dependent kinase 5
B12	Hs.280881	NM_004196	CDKL1	Cyclin-dependent kinase-like 1 (CDC2-related kinase)
C01	Hs.302002	NM_020985	CHAT	Choline acetyltransferase
C02	Hs.436657	NM_001831	CLU	Clusterin
C03	Hs.520898	NM_001908	CTSB	Cathepsin B
C04	Hs.128065	NM_001814	CTSC	Cathepsin C
C05	Hs.121575	NM_001909	CTSD	Cathepsin D
C06	Hs.421724	NM_001911	CTSG	Cathepsin G
C07	Hs.418123	NM_001912	CTSL1	Cathepsin L1
C08	Hs.517517	NM_001429	EP300	E1A binding protein p300
C09	Hs.133982	NM_001433	ERN1	Endoplasmic reticulum to nucleus signalling 1
C10	Hs.134974	NM_002045	GAP43	Growth associated protein 43
C11	Hs.241431	NM_020988	GNAO1	Guanine nucleotide binding protein (G protein), alpha activating activity polypeptide O
C12	Hs.551502	NM_002073	GNAZ	Guanine nucleotide binding protein (G protein), alpha z polypeptide
D01	Hs.430425	NM_002074	GNB1	Guanine nucleotide binding protein (G protein), beta polypeptide 1
D02	Hs.185172	NM_005273	GNB2	Guanine nucleotide binding protein (G protein), beta polypeptide 2
D03	Hs.270543	NM_021629	GNB4	Guanine nucleotide binding protein (G protein), beta polypeptide 4
D04	Hs.155090	NM_016194	GNB5	Guanine nucleotide binding protein (G protein), beta 5
D05	Hs.534196	NM_001017998	GNG10	Guanine nucleotide binding protein (G protein), gamma 10
D06	Hs.83381	NM_004126	GNG11	Guanine nucleotide binding protein (G protein), gamma 11
D07	Hs.179915	NM_012202	GNG3	Guanine nucleotide binding protein (G protein), gamma 3
D08	Hs.591531	NM_004485	GNG4	Guanine nucleotide binding protein (G protein), gamma 4
D09	Hs.645427	NM_005274	GNG5	Guanine nucleotide binding protein (G protein), gamma 5
D10	Hs.515544	NM_052847	GNG7	Guanine nucleotide binding protein (G protein), gamma 7
D11	Hs.283961	NM_033258	GNG8	Guanine nucleotide binding protein (G protein), gamma 8
D12	Hs.647500	NM_021955	GNGT1	Guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 1
E01	Hs.181781	NM_031498	GNGT2	Guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 2
E02	Hs.466828	NM_019884	GSK3A	Glycogen synthase kinase 3 alpha
E03	Hs.445733	NM_002093	GSK3B	Glycogen synthase kinase 3 beta
E04	Hs.171280	NM_004493	HSD17B10	Hydroxysteroid (17-beta) dehydrogenase 10

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Position	UniGene	GenBank	Symbol	Description
E05	Hs.500546	NM_004969	IDE	Insulin-degrading enzyme
E06	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
E07	Hs.89832	NM_000207	INS	Insulin
E08	Hs.465744	NM_000208	INSR	Insulin receptor
E09	Hs.180878	NM_000237	LPL	Lipoprotein lipase
E10	Hs.162757	NM_002332	LRP1	Low density lipoprotein-related protein 1 (alpha-2-macroglobulin receptor)
E11	Hs.584775	NM_002336	LRP6	Low density lipoprotein receptor-related protein 6
E12	Hs.576154	NM_004631	LRP8	Low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
F01	Hs.368281	NM_002374	MAP2	Microtubule-associated protein 2
F02	Hs.101174	NM_005910	MAPT	Microtubule-associated protein tau
F03	Hs.458272	NM_000250	MPO	Myeloperoxidase
F04	Hs.517249	NM_015331	NCSTN	Nicastrin
F05	Hs.407580	NM_003628	PKP4	Plakophilin 4
F06	Hs.491582	NM_000930	PLAT	Plasminogen activator, tissue
F07	Hs.77274	NM_002658	PLAU	Plasminogen activator, urokinase
F08	Hs.143436	NM_000301	PLG	Plasminogen
F09	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
F10	Hs.460355	NM_002738	PRKCB1	Protein kinase C, beta 1
F11	Hs.155342	NM_006254	PRKCD	Protein kinase C, delta
F12	Hs.580351	NM_005400	PRKCE	Protein kinase C, epsilon
G01	Hs.631564	NM_002739	PRKCG	Protein kinase C, gamma
G02	Hs.478199	NM_002740	PRKCI	Protein kinase C, iota
G03	Hs.498570	NM_006257	PRKCC	Protein kinase C, theta
G04	Hs.496255	NM_002744	PRKCZ	Protein kinase C, zeta
G05	Hs.592324	NM_000021	PSEN1	Presenilin 1 (Alzheimer disease 3)
G06	Hs.25363	NM_000447	PSEN2	Presenilin 2 (Alzheimer disease 4)
G07	Hs.510334	NM_001085	SERPINA3	Serpin peptidase inhibitor, clade A (alpha-1 antitrypsin, antitrypsin), member 3
G08	Hs.271771	NM_000345	SNCA	Synuclein, alpha (non A4 component of amyloid precursor)
G09	Hs.90297	NM_003085	SNCB	Synuclein, beta
G10	Hs.9589	NM_013438	UBQLN1	Ubiquilin 1
G11	Hs.119251	NM_003365	UQCRC1	Ubiquinol-cytochrome c reductase core protein I
G12	Hs.592048	NM_003366	UQCRC2	Ubiquinol-cytochrome c reductase core protein II
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