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Product Specification Sheet

RT² Profiler™ PCR Array:

Mouse Diabetes

Catalog Number	For Real-Time Instruments:
PAMM-023A	ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4; and Stratagene Mx3005p, Mx3000p
PAMM-023C	ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus
PAMM-023D	Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000
PAMM-023E	ABI 7900HT 384-Well Block
PAMM-023F	Roche LightCycler 480 96-well Block
PAMM-023G	Roche LightCycler 480 384-well Block

Description

The Mouse Diabetes RT² Profiler PCR Array profiles the expression of 84 genes related to the onset, development, and progression of diabetes. They include genes that contribute to obesity, insulin resistance, the early onset of diabetes, and complications from diabetes mellitus. These genes are grouped into six functional categories: receptors, transporters & channels; nuclear receptors; metabolic enzymes; secreted factors; signal transduction proteins; and transcription factors. Many of the genes included have a tissue-specific or tissue-biased expression pattern which can also be affected by different pathophysiological states. This array can be used to study models of obesity and diabetes, to screen for therapeutics and their targets, and to profile the effect of various epidemiological and environmental factors on gene expression in various tissues or cell lines. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to diabetes with this array.

Functional Gene Groupings

Receptors, Transporters & Channels: Adra1a, Adrb3, Aqp2, Ccr2, Cd28, Ceacam1, Ctla4, Gcgr, Glp1r, Icam1, Il4ra, Nsf, Rab4a, Sell (LECAM-1), Slc2a4 (GLUT4), Slc14a2, Snap23, Snap25, Stx4a, Stxbp1, Stxbp4, Tnfrsf1a, Tnfrsf1b, Vamp2, Vamp3, Vapa.

Nuclear Receptors: Ppara, Pparg.

Metabolic Enzymes: Ace, Acly, Dpp4, Enpp1, Fbp1, G6pc, G6pd2, Gpd1, Gsk3b, Hmox1, Ide, Nos3, Parp1 (Adprt1), Pck1, Pfkfb3, Pygl, Sod2.

Secreted Factors: Agt, Ccl5 (Rantes), Gcg, Ifng, Il6, Il10, Il12b, Ins1, Retn, Tgfb1, Tnf, Vegfa.

Signal Transduction: Akt2, Dusp4, Igfbp5, Ikbkb (IKKbeta), Inppl1 (SHIP2), Irs1, Mapk8 (JNK1), Mapk14 (p38 MAPK), Pik3cd, Pik3r1, Ptpn1 (PTP-1B), Trib3 (Skip3).

Transcription Factors: Cebpa, Foxc2, Foxg1, Foxp3, Hnf4a, Pdx1 (Ipf1), Neurod1, Nfkb1, Nrf1, Pax4, Ppargc1a, Srebf1, Tcf2 (HNF1b).

Others: Serpine1 (PAI-1), Ucp2.

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.

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

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

References

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10. Makita Y, Moczulski DK, Bochenski J, Smiles AM, Warram JH, Krolewski AS. Methylenetetrahydrofolate reductase gene polymorphism and susceptibility to diabetic nephropathy in type 1 diabetes. *Am J Kidney Dis.* 2003 Jun; **41** (6): 1189-94.
11. Sartipy P, Loskutoff DJ. Monocyte chemoattractant protein 1 in obesity and insulin resistance. *Proc Natl Acad Sci U S A*. 2003 Jun 10; **100** (12): 7265-70.
12. Bassuny WM, Ihara K, Sasaki Y, Kuromaru R, Kohno H, Matsuura N, Hara T. A functional polymorphism in the promoter/enhancer region of the FOXP3/Scurfin gene associated with type 1 diabetes. *Immunogenetics.* 2003 Jun; **55** (3): 149-56.

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Array Layout: Mouse Diabetes RT^2 Profiler PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	Ace	Acly	Adra1a	Adrb3	Agt	Akt2	Aqp2	Ccl5	Ccr2	Cd28	Ceacam1	Cebpa
B	Ctla4	Dpp4	Dusp4	Enpp1	Fbp1	Foxc2	Foxg1	Foxp3	G6pc	G6pd2	Gcg	Gcgr
C	Glp1r	Gpd1	Gsk3b	Hmox1	Hnf4a	Icam1	Ide	Ifng	Igfbp5	Ikbkb	Il10	Il12b
D	Il4ra	Il6	Inppl1	Ins1	Pdx1	Irs1	Mapk14	Mapk8	Neurod1	Nfkb1	Nos3	Nrf1
E	Nsf	Parp1	Pax4	Pck1	Pfkfb3	Pik3cd	Pik3r1	Ppara	Pparg	Ppargc1a	Ptpn1	Pygl
F	Rab4a	Retn	Sell	Serpine1	Slc14a2	Slc2a4	Snap23	Snap25	Sod2	Srebf1	Stx4a	Stxbp1
G	Stxbp4	Tcf2	Tgfb1	Tnf	Tnfrsf1a	Tnfrsf1b	Trib3	Ucp2	Vamp2	Vamp3	Vapa	Vegfa
H	Gusb	Hprt1	Hsp90ab1	Gapdh	Actb	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Mm.754	NM_009598	Ace	Angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
A02	Mm.282039	NM_134037	Acly	ATP citrate lyase
A03	Mm.57064	NM_013461	Adra1a	Adrenergic receptor, alpha 1a
A04	Mm.278475	NM_013462	Adrb3	Adrenergic receptor, beta 3
A05	Mm.301626	NM_007428	Agt	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A06	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A07	Mm.20206	NM_009699	Aqp2	Aquaporin 2
A08	Mm.284248	NM_013653	Ccl5	Chemokine (C-C motif) ligand 5
A09	Mm.6272	NM_009915	Ccr2	Chemokine (C-C motif) receptor 2
A10	Mm.255003	NM_007642	Cd28	CD28 antigen
A11	Mm.322502	NM_011926	Ceacam1	CEA-related cell adhesion molecule 1
A12	Mm.349667	NM_007678	Cebpa	CCAAT/enhancer binding protein (C/EBP), alpha
B01	Mm.390	NM_009843	Ctla4	Cytotoxic T-lymphocyte-associated protein 4
B02	Mm.1151	NM_010074	Dpp4	Dipeptidylpeptidase 4
B03	Mm.170276	NM_176933	Dusp4	Dual specificity phosphatase 4
B04	Mm.27254	NM_008813	Enpp1	Ectonucleotide pyrophosphatase/phosphodiesterase 1
B05	Mm.423078	NM_019395	Fbp1	Fructose bisphosphatase 1
B06	Mm.14092	NM_013519	Foxc2	Forkhead box C2
B07	Mm.185800	NM_008241	Foxg1	Forkhead box G1
B08	Mm.182291	NM_054039	Foxp3	Forkhead box P3
B09	Mm.18064	NM_008061	G6pc	Glucose-6-phosphatase, catalytic
B10	Mm.347430	NM_019468	G6pd2	Glucose-6-phosphate dehydrogenase 2
B11	Mm.45494	NM_008100	Gcg	Glucagon
B12	Mm.22329	NM_008101	Gcgr	Glucagon receptor
C01	Mm.390969	NM_021332	Glp1r	Glucagon-like peptide 1 receptor
C02	Mm.252391	NM_010271	Gpd1	Glycerol-3-phosphate dehydrogenase 1 (soluble)
C03	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
C04	Mm.276389	NM_010442	Hmox1	Heme oxygenase (decycling) 1
C05	Mm.202383	NM_008261	Hnf4a	Hepatic nuclear factor 4, alpha
C06	Mm.435508	NM_010493	Icam1	Intercellular adhesion molecule
C07	Mm.28366	NM_031156	Ide	Insulin degrading enzyme
C08	Mm.240327	NM_008337	Ifng	Interferon gamma
C09	Mm.405761	NM_010518	Igfbp5	Insulin-like growth factor binding protein 5
C10	Mm.277886	NM_010546	Ikbkb	Inhibitor of kappaB kinase beta
C11	Mm.874	NM_010548	Il10	Interleukin 10
C12	Mm.239707	NM_008352	Il12b	Interleukin 12B
D01	Mm.233802	NM_001008700	Il4ra	Interleukin 4 receptor, alpha
D02	Mm.1019	NM_031168	Il6	Interleukin 6
D03	Mm.5028	NM_010567	Inppl1	Inositol polyphosphate phosphatase-like 1

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Position	UniGene	GenBank	Symbol	Description
D04	Mm.46269	NM_008386	Ins1	Insulin I
D05	Mm.389714	NM_008814	Pdx1	Pancreatic and duodenal homeobox 1
D06	Mm.4952	NM_010570	Irs1	Insulin receptor substrate 1
D07	Mm.311337	NM_011951	Mapk14	Mitogen activated protein kinase 14
D08	Mm.21495	NM_016700	Mapk8	Mitogen activated protein kinase 8
D09	Mm.4636	NM_010894	Neurod1	Neurogenic differentiation 1
D10	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light chain gene enhancer in B-cells 1, p105
D11	Mm.258415	NM_008713	Nos3	Nitric oxide synthase 3, endothelial cell
D12	Mm.259258	NM_010938	Nrf1	Nuclear respiratory factor 1
E01	Mm.260117	NM_008740	Nsf	N-ethylmaleimide sensitive fusion protein
E02	Mm.277779	NM_007415	Parp1	Poly (ADP-ribose) polymerase family, member 1
E03	Mm.8026	NM_011038	Pax4	Paired box gene 4
E04	Mm.266867	NM_011044	Pck1	Phosphoenolpyruvate carboxykinase 1, cytosolic
E05	Mm.19669	NM_133232	Pfkfb3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
E06	Mm.229108	NM_008840	Pik3cd	Phosphatidylinositol 3-kinase catalytic delta polypeptide
E07	Mm.259333	NM_001024955	Pik3r1	Phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p85 alpha)
E08	Mm.212789	NM_011144	Ppara	Peroxisome proliferator activated receptor alpha
E09	Mm.3020	NM_011146	Pparg	Peroxisome proliferator activated receptor gamma
E10	Mm.259072	NM_008904	Ppargc1a	Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha
E11	Mm.277916	NM_011201	Ptpn1	Protein tyrosine phosphatase, non-receptor type 1
E12	Mm.256926	NM_133198	Pygl	Liver glycogen phosphorylase
F01	Mm.9221	NM_009003	Rab4a	RAB4A, member RAS oncogene family
F02	Mm.1181	NM_022984	Retn	Resistin
F03	Mm.1461	NM_011346	Sell	Selectin, lymphocyte
F04	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F05	Mm.44158	NM_030683	Slc14a2	Solute carrier family 14 (urea transporter), member 2
F06	Mm.10661	NM_009204	Slc2a4	Solute carrier family 2 (facilitated glucose transporter), member 4
F07	Mm.245715	NM_009222	Snap23	Synaptosomal-associated protein 23
F08	Mm.45953	NM_011428	Snap25	Synaptosomal-associated protein 25
F09	Mm.290876	NM_013671	Sod2	Superoxide dismutase 2, mitochondrial
F10	Mm.278701	NM_011480	Srebf1	Sterol regulatory element binding factor 1
F11	Mm.24867	NM_009294	Stx4a	Syntaxin 4A (placental)
F12	Mm.278865	NM_009295	Stxbp1	Syntaxin binding protein 1
G01	Mm.209673	NM_011505	Stxbp4	Syntaxin binding protein 4
G02	Mm.7226	NM_009330	Tcf2	Transcription factor 2
G03	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G04	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G05	Mm.1258	NM_011609	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G06	Mm.235328	NM_011610	Tnfrsf1b	Tumor necrosis factor receptor superfamily, member 1b
G07	Mm.276018	NM_175093	Trib3	Tribbles homolog 3 (Drosophila)
G08	Mm.171378	NM_011671	Ucp2	Uncoupling protein 2 (mitochondrial, proton carrier)
G09	Mm.28643	NM_009497	Vamp2	Vesicle-associated membrane protein 2
G10	Mm.273930	NM_009498	Vamp3	Vesicle-associated membrane protein 3
G11	Mm.391032	NM_013933	Vapa	Vesicle-associated membrane protein, associated protein A
G12	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
H01	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H02	Mm.299381	NM_013556	Hprt1	Hypoxanthine guanine phosphoribosyl transferase 1
H03	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90kDa alpha (cytosolic), class B member 1
H04	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H05	Mm.328431	NM_007393	Actb	Actin, beta, cytoplasmic
H06	N/A	SA_00106	MGDC	Mouse 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

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