RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Human Glycosylation

Cat. no. 330231 PAHS-046ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Human Glycosylation RT² Profiler PCR Array profiles the expression of 84 key genes encoding enzymes that post-translationally add and remove sugar residues to and from proteoglycans and glycoproteins. The process of generating and altering mature N-linked and O-linked glycans essential for proteoglycan and glycoprotein function requires not only glycosyltransferase activity for de novo oligosaccharide synthesis, but also both glycosidase and glycosyltransferase activity for remodeling. Increased expression of cell surface and secreted proteins, whether by stimulation of cells to differentiate or proliferate or by exogenous over-expression, requires more glycosyltransferase and glycosidase activity, contributed at least in part by their own increased gene expression. This array includes glycosyltransferase and glycosidase genes for several important sugars: galactose, glucose, mannose, N-acetylgalactosamine, N-acetylglucosamine, fucose, and sialic acid. Some of the represented enzymes also act on glycosphingolipids. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in protein glycosylation with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cycler (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	A4GNT	AGA	B3GALTL	B3GNT2	B3GNT3	B3GNT4	B3GNT8	B4GALT1	B4GALT2	B4GALT3	B4GALT5	C1GALT1
B	C1GALT1C1	EDEM1	EDEM2	EDEM3	FUCA1	FUCA2	FUT11	FUT8	GALNT1	GALNT10	GALNT11	GALNT12
C	GALNT13	GALNT14	GALNT2	GALNT3	GALNT4	GALNT6	GALNT7	GALNT8	GALNT9	GALNTL1	GALNTL5	GALNTL6
D	GANAB	GCNT1	GCNT3	GCNT4	GLB1	GNPTAB	GNPTG	HEXA	HEXB	MAN1A1	MAN1A2	MAN1B1
E	MAN1C1	MAN2A1	MAN2A2	MAN2B1	MANBA	MGAT1	MGAT2	MGAT3	MGAT4A	MGAT4B	MGAT4C	MGAT5
F	MGAT5B	MOGS	NAGPA	NEU1	NEU2	NEU3	NEU4	OGT	POFUT1	POFUT2	POMGNT1	POMT1
G	POMT2	PRKCSH	ST3GAL1	ST3GAL2	ST6GAL1	ST6GALNAC1	ST8SIA2	ST8SIA3	ST8SIA4	ST8SIA6	UGGT1	UGGT2
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.278960	NM_016161	A4GNT	Alpha-1,4-N-acetylglucosaminyltransferase
A02	Hs.207776	NM_000027	AGA	Aspartylglucosaminidase
A03	Hs.13205	NM_194318	B3GALTL	Beta 1,3-galactosyltransferase-like
A04	Hs.173203	NM_006577	B3GNT2	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 2
A05	Hs.657825	NM_014256	B3GNT3	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 3
A06	Hs.363315	NM_030765	B3GNT4	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 4
A07	Hs.441681	NM_198540	B3GNT8	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 8
A08	Hs.272011	NM_001497	B4GALT1	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1
A09	Hs.632403	NM_003780	B4GALT2	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 2
A10	Hs.321231	NM_003779	B4GALT3	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 3
A11	Hs.370487	NM_004776	B4GALT5	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 5
A12	Hs.592180	NM_020156	C1GALT1	Core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
B01	Hs.643920	NM_152692	C1GALT1C1	C1GALT1-specific chaperone 1
B02	Hs.224616	NM_014674	EDEM1	ER degradation enhancer, mannosidase alpha-like 1
B03	Hs.356273	NM_018217	EDEM2	ER degradation enhancer, mannosidase alpha-like 2
B04	Hs.523811	NM_025191	EDEM3	ER degradation enhancer, mannosidase alpha-like 3
B05	Hs.370858	NM_000147	FUCA1	Fucosidase, alpha-L- 1, tissue
B06	Hs.591332	NM_032020	FUCA2	Fucosidase, alpha-L- 2, plasma
B07	Hs.588854	NM_173540	FUT11	Fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
B08	Hs.654961	NM_178157	FUT8	Fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
B09	Hs.514806	NM_020474	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
B10	Hs.706865	NM_198321	GALNT10	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 10 (GalNAc-T10)
B11	Hs.647109	NM_022087	GALNT11	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 11 (GalNAc-T11)
B12	Hs.47099	NM_024642	GALNT12	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 12 (GalNAc-T12)
C01	Hs.470277	NM_052917	GALNT13	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 13 (GalNAc-T13)
C02	Hs.468058	NM_024572	GALNT14	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14)
C03	Hs.716384	NM_004481	GALNT2	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 2 (GalNAc-T2)
C04	Hs.170986	NM_004482	GALNT3	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 3 (GalNAc-T3)
C05	Hs.25130	NM_003774	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
C06	Hs.505575	NM_007210	GALNT6	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 6 (GalNAc-T6)
C07	Hs.548088	NM_017423	GALNT7	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-T7)
C08	Hs.511985	NM_017417	GALNT8	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 8 (GalNAc-T8)

Position	UniGene	GenBank	Symbol	Description
C09	Hs.301062	NM_021808	GALNT9	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 9 (GalNAc-T9)
C10	Hs.21035	NM_020692	GALNTL1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 1
C11	Hs.647077	NM_145292	GALNTL5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 5
C12	Hs.386236	NM_001034845	GALNTL6	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 6
D01	Hs.595071	NM_198334	GANAB	Glucosidase, alpha; neutral AB
D02	Hs.521568	NM_001490	GCNT1	Glucosaminyl (N-acetyl) transferase 1, core 2
D03	Hs.194710	NM_004751	GCNT3	Glucosaminyl (N-acetyl) transferase 3, mucin type
D04	Hs.272404	NM_016591	GCNT4	Glucosaminyl (N-acetyl) transferase 4, core 2
D05	Hs.443031	NM_000404	GLB1	Galactosidase, beta 1
D06	Hs.46850	NM_024312	GNPTAB	N-acetylglucosamine-1-phosphate transferase, alpha and beta subunits
D07	Hs.241575	NM_032520	GNPTG	N-acetylglucosamine-1-phosphate transferase, gamma subunit
D08	Hs.604479	NM_000520	HEXA	Hexosaminidase A (alpha polypeptide)
D09	Hs.69293	NM_000521	HEXB	Hexosaminidase B (beta polypeptide)
D10	Hs.102788	NM_005907	MAN1A1	Mannosidase, alpha, class 1A, member 1
D11	Hs.435938	NM_006699	MAN1A2	Mannosidase, alpha, class 1A, member 2
D12	Hs.279881	NM_016219	MAN1B1	Mannosidase, alpha, class 1B, member 1
E01	Hs.197043	NM_020379	MAN1C1	Mannosidase, alpha, class 1C, member 1
E02	Hs.432822	NM_002372	MAN2A1	Mannosidase, alpha, class 2A, member 1
E03	Hs.116459	NM_006122	MAN2A2	Mannosidase, alpha, class 2A, member 2
E04	Hs.356769	NM_000528	MAN2B1	Mannosidase, alpha, class 2B, member 1
E05	Hs.480415	NM_005908	MANBA	Mannosidase, beta A, lysosomal
E06	Hs.519818	NM_002406	MGAT1	Mannosyl (alpha-1,3-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
E07	Hs.93338	NM_002408	MGAT2	Mannosyl (alpha-1,6-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
E08	Hs.276808	NM_002409	MGAT3	Mannosyl (beta-1,4-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase
E09	Hs.177576	NM_012214	MGAT4A	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme A
E10	Hs.567419	NM_014275	MGAT4B	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme B
E11	Hs.589093	NM_013244	MGAT4C	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme C (putative)
E12	Hs.651869	NM_002410	MGAT5	Mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase
F01	Hs.144531	NM_144677	MGAT5B	Mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase, isozyme B
F02	Hs.516119	NM_006302	MOGS	Mannosyl-oligosaccharide glucosidase
F03	Hs.21334	NM_016256	NAGPA	N-acetylglucosamine-1-phosphodiester alpha-N-acetylglucosaminidase
F04	Hs.520037	NM_000434	NEU1	Sialidase 1 (lysosomal sialidase)
F05	Hs.532681	NM_005383	NEU2	Sialidase 2 (cytosolic sialidase)
F06	Hs.191074	NM_006656	NEU3	Sialidase 3 (membrane sialidase)
F07	Hs.551747	NM_080741	NEU4	Sialidase 4
F08	Hs.405410	NM_181673	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine: polypeptide-N-acetylglucosaminyl transferase)
F09	Hs.472409	NM_172236	POFUT1	Protein O-fucosyltransferase 1
F10	Hs.592164	NM_133635	POFUT2	Protein O-fucosyltransferase 2
F11	Hs.525134	NM_017739	POMGNT1	Protein O-linked mannose beta1,2-N-acetylglucosaminyltransferase
F12	Hs.522449	NM_007171	POMT1	Protein-O-mannosyltransferase 1
G01	Hs.132989	NM_013382	POMT2	Protein-O-mannosyltransferase 2
G02	Hs.610830	NM_002743	PRKCSH	Protein kinase C substrate 80K-H
G03	Hs.374257	NM_173344	ST3GAL1	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
G04	Hs.368611	NM_006927	ST3GAL2	ST3 beta-galactoside alpha-2,3-sialyltransferase 2
G05	Hs.207459	NM_003032	ST6GAL1	ST6 beta-galactosamide alpha-2,6-sialyltranferase 1
G06	Hs.105352	NM_018414	ST6GALNAC 1	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1, 3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 1
G07	Hs.302341	NM_006011	ST8SIA2	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 2
G08	Hs.23172	NM_015879	ST8SIA3	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 3
G09	Hs.308628	NM_175052	ST8SIA4	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4
G10	Hs.677766	NM_001004470	ST8SIA6	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6
G11	Hs.34180	NM_020120	UGGT1	UDP-glucose glycoprotein glucosyltransferase 1
G12	Hs.193226	NM_020121	UGGT2	UDP-glucose glycoprotein glucosyltransferase 2
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
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

Position	UniGene	GenBank	Symbol	Description
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

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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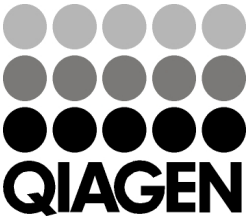

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