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

Rat Glycosylation

Cat. no. 330231 PARN-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 Rat 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	Aga	B3gnt6	B3gnt8	B4galnt1	B4galnt4	B4galt1	B4galt2	B4galt3	B4galt5	C1galt1	C1galt1c1	Edem1
B	Edem2	Fuca1	Fuca2	Fut11	Fut8	Galnt1	Galnt10	Galnt11	Galnt13	Galnt14	Galnt2	Galnt3
C	Galnt4	Galnt5	Galnt7	Galnt9	Galntl1	Galntl2	Galntl4	Ganab	Gcnt1	Gcnt3	Gcs1	Glb1
D	Gnptg	Hexa	Hexb	Lfng	Man1a1	Man1a2	Man1c1	Man2a1	Man2a2	Man2b1	Man2c1	Manba
E	Manea	Mfng	Mgat1	Mgat2	Mgat3	Mgat4a	Mgat4b	Mgat4c	Mgat5	Mgat5b	Nagpa	Neu1
F	Neu2	Neu4	Ogt	Pofut1	Pofut2	Pomgnt1	Pomt1	Pomt2	Prkcsh	Rfng	St3gal1	St3gal2
G	St3gal4	St6gal1	St6gal2	St6galnac1	St6galnac2	St8sia1	St8sia2	St8sia3	St8sia5	St8sia6	Uggt1	Wbscr17
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.104649	NM_001031641	Aga	Aspartylglucosaminidase
A02	Rn.129793	NM_001106211	B3gnt6	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 6 (core 3 synthase)
A03	Rn.100953	NM_001107492	B3gnt8	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 8
A04	Rn.10119	NM_022860	B4galnt1	Beta-1,4-N-acetyl-galactosaminyl transferase 1
A05	Rn.98521	NM_001107562	B4galnt4	Beta-1,4-N-acetyl-galactosaminyl transferase 4
A06	Rn.17157	NM_053287	B4galt1	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1
A07	Rn.219217	NM_001107965	B4galt2	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 2
A08	Rn.91751	NM_001009539	B4galt3	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 3
A09	Rn.107246	NM_001108608	B4galt5	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 5
A10	Rn.37669	NM_022950	C1galt1	Core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
A11	Rn.110010	NM_001030033	C1galt1c1	C1GALT1-specific chaperone 1
A12	Rn.8162	XM_238366	Edem1	ER degradation enhancer, mannosidase alpha-like 1
B01	Rn.18635	NM_001004230	Edem2	ER degradation enhancer, mannosidase alpha-like 2
B02	Rn.3469	NM_012562	Fuca1	Fucosidase, alpha-L- 1, tissue
B03	Rn.47769	NM_001004218	Fuca2	Fucosidase, alpha-L- 2, plasma
B04	Rn.24040	NM_173308	Fut11	Fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
B05	Rn.1717	NM_001002289	Fut8	Fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
B06	Rn.10266	NM_024373	Galnt1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
B07	Rn.60224	NM_130742	Galnt10	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 10 (GalNAc-T10)
B08	Rn.211885	NM_199393	Galnt11	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 11 (GalNAc-T11)
B09	Rn.39371	NM_199106	Galnt13	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 13 (GalNAc-T13)
B10	Rn.24642	NM_001012109	Galnt14	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14)
B11	Rn.144772	NM_001106196	Galnt2	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 2 (GalNAc-T2)
B12	Rn.78014	NM_001015032	Galnt3	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 3 (GalNAc-T3)
C01	Rn.207152	NM_001025053	Galnt4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
C02	Rn.30048	NM_031796	Galnt5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5 (GalNAc-T5)
C03	Rn.207200	NM_022926	Galnt7	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-T7)
C04	Rn.105079	NM_001107151	Galnt9	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 9
C05	Rn.40168	XM_343087	Galntl1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 1
C06	Rn.41882	XM_224621	Galntl2	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 2

Position	UniGene	GenBank	Symbol	Description
C07	Rn.212131	NM_001079884	Galntl4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 4
C08	Rn.99241	NM_001106334	Ganab	Glucosidase, alpha; neutral AB
C09	Rn.162516	NM_022276	Gcnt1	Glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1, 6-N-acetylglucosaminyltransferase)
C10	Rn.43518	NM_173312	Gcnt3	Glucosaminyl (N-acetyl) transferase 3, mucin type
C11	Rn.22161	NM_031749	Gcs1	Glucosidase 1
C12	Rn.4187	NM_001108192	Glb1	Galactosidase, beta 1
D01	Rn.2814	NM_001100493	Gnptg	N-acetylglucosamine-1-phosphate transferase, gamma subunit
D02	Rn.92939	NM_001004443	Hexa	Hexosaminidase A
D03	Rn.203067	NM_001011946	Hexb	Hexosaminidase B
D04	Rn.127809	NM_133393	Lfng	LFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase
D05	Rn.3576	NM_001033656	Man1a1	Mannosidase, alpha, class 1A, member 1
D06	Rn.218006	NM_001106452	Man1a2	Mannosidase, alpha, class 1A, member 2
D07	Rn.29300	NM_001108687	Man1c1	Mannosidase, alpha, class 1C, member 1
D08	Rn.163804	NM_012979	Man2a1	Mannosidase, alpha, class 2A, member 1
D09	Rn.41796	NM_001107527	Man2a2	Mannosidase 2, alpha 2
D10	Rn.102840	NM_199404	Man2b1	Mannosidase, alpha, class 2B, member 1
D11	Rn.11301	NM_139256	Man2c1	Mannosidase, alpha, class 2C, member 1
D12	Rn.20578	NM_001031655	Manba	Mannosidase, beta A, lysosomal
E01	Rn.10855	NM_080785	Manea	Mannosidase, endo-alpha
E02	Rn.102109	NM_199110	Mfng	MFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase
E03	Rn.2712	NM_030861	Mgat1	Mannosyl (alpha-1,3-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
E04	Rn.2342	NM_053604	Mgat2	Mannosyl (alpha-1,6-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
E05	Rn.9803	NM_019239	Mgat3	Mannosyl (beta-1,4-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase
E06	Rn.145359	NM_001012225	Mgat4a	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme A
E07	Rn.24701	NM_001127533	Mgat4b	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme B
E08	Rn.144889	NM_001135814	Mgat4c	Mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme C (putative)
E09	Rn.53998	NM_023095	Mgat5	Mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase
E10	Rn.50582	NM_001107068	Mgat5b	Mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase, isozyme B
E11	Rn.27072	NM_001108265	Nagpa	N-acetylglucosamine-1-phosphodiester alpha-N-acetylglucosaminidase
E12	Rn.128560	NM_031522	Neu1	Sialidase 1 (lysosomal sialidase)
F01	Rn.9731	NM_017130	Neu2	Sialidase 2 (cytosolic sialidase)
F02	Rn.198849	NM_001108234	Neu4	Sialidase 4
F03	Rn.82705	NM_017107	Ogt	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine: polypeptide-N-acetylglucosaminyl transferase)
F04	Rn.214685	NM_001002278	Pofut1	Protein O-fucosyltransferase 1
F05	Rn.11702	NM_001107621	Pofut2	Protein O-fucosyltransferase 2
F06	Rn.162088	NM_001007747	Pomgnt1	Protein O-linked mannose beta1,2-N-acetylglucosaminyltransferase
F07	Rn.162659	NM_053406	Pomt1	Protein-O-mannosyltransferase 1
F08	Rn.162888	NM_001047114	Pomt2	Protein-O-mannosyltransferase 2
F09	Rn.104417	NM_001106806	Prkcsh	Protein kinase C substrate 80K-H
F10	Rn.168817	NM_021849	Rfng	RFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase
F11	Rn.104514	NM_001013219	St3gal1	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
F12	Rn.33216	NM_031695	St3gal2	ST3 beta-galactoside alpha-2,3-sialyltransferase 2
G01	Rn.24125	NM_203337	St3gal4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
G02	Rn.54567	NM_147205	St6gal1	ST6 beta-galactosamide alpha-2,6-sialyltranferase 1
G03	Rn.214119	XM_236826	St6gal2	ST6 beta-galactosamide alpha-2,6-sialyltranferase 2
G04	Rn.198923	NM_001105859	St6galnac1	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1, 3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 1
G05	Rn.53257	NM_001031652	St6galnac2	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1, 3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
G06	Rn.96242	NM_012813	St8sia1	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1
G07	Rn.44391	NM_057156	St8sia2	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 2
G08	Rn.90977	NM_013029	St8sia3	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 3
G09	Rn.199050	NM_213628	St8sia5	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 5
G10	Rn.104457	NM_213624	St8sia6	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6
G11	Rn.162227	NM_133596	Uggt1	UDP-glucose glycoprotein glucosyltransferase 1
G12	Rn.214637	NM_001025112	Wbscr17	Williams-Beuren syndrome chromosome region 17 homolog (human)
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control

Position	UniGene	GenBank	Symbol	Description
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

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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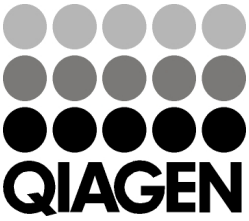

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