

# QuantiNova® LNA® Probe PCR Focus Panels (96-Well Format and 384-Well [4 x 96] Format)

## Mouse Drug Metabolism: Phase I Enzymes

Cat. no. 249955 UPMM-069ZA

For study focus gene expression analysis

### Shipping and storage

QuantiNova LNA Probe PCR Focus Panels are shipped at room temperature. Immediately upon receipt, they should be stored protected from light at 2–8°C for short term storage or at –30°C to –15°C for long time storage. Under these conditions, all components are stable for at least 12 months.

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

For optimal performance, QuantiNova LNA Probe PCR Focus Panels should be used together with the QuantiNova Reverse Transcription Kit for cDNA synthesis and the QuantiNova Probe PCR Kit (Mastermix) for PCR.

### Panel layout (96-well): QuantiNova LNA Probe PCR Focus Panel

For the 384-well (4 × 96) PCR panels, genes are present in a staggered format. Refer to the QuantiNova LNA Probe PCR Handbook at [www.qiagen.com](http://www.qiagen.com) for further details.

	1	2	3	4	5	6	7	8	9	10	11	12
A	A3gal2	A4gal1	Aanot	Acs1	Acs3	Acs4	Acsm1	Acsm3	Agxt	Alg5	As3mt	Baat
B	Kyat1	Ces1d	Ces1e	Ces1g	Ces2c	Ces5a	Chat7	Comt	Ddost	Eef1b2	Ephx1	Ephx2
C	Galnt1	Galnt3	Gamt	Gcnt1	Glyat	Gnmt	Gsta3	Gsta4	Gstk1	Gstm2	Gstm3	Gstm4
D	Gstm5	Gsto1	Gsto2	Gstp1	Gstt1	Gstt2	Has1	Hnmt	Inmt	Mgat1	Mgst1	Mgst2
E	Mgst3	Nao20	Nat1	Nat2	Nnmt	Nqo1	Nqo2	Pnmt	Pomgnt1	Ptges	Sat1	Sult1a1
F	Sult1b1	Sult1c1	Sult1c2	Sult1e1	Sult2b1	Sult4a1	Sult5a1	Sult6b1	Tpmt	Tst	Ugcg	Ugt1a1
G	Ugt1a2	Ugt1a6a	Ugt2a1	Ugt2a3	Ugt2b1	Ugt2b34	Ugt2b37	Ugt2b38	Ugt2b5	Ugt3a1	Ugt8a	Xdh
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	QIC	QIC	QIC	PPC	PPC	PPC

## Gene table: QuantiNova LNA Probe PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	UPFM096084 4	ENSMUST00000 030585.7	A3galt2	ENSMUSG00 000028794	alpha 1,3-galactosyltransferase 2 (isoglobotriaosylceramide synthase) Source MGI Symbol Acc MGI 2685279
A02	UPFM091764 5	ENSMUST00000 164614.2	A4galt	ENSMUSG00 000047878	alpha 1,4-galactosyltransferase Source MGI Symbol Acc MGI 3512453
A03	UPFM070445 6	ENSMUST00000 153476.7	Aanat	ENSMUSG00 000020804	arylalkylamine N-acetyltransferase Source MGI Symbol Acc MGI 1328365
A04	UPFM092757 2	ENSMUST00000 152423.1	Acs1	ENSMUSG00 000018796	acyl-CoA synthetase long-chain family member 1 Source MGI Symbol Acc MGI 102797
A05	UPFM069978 7	ENSMUST00000 134566.7	Acs13	ENSMUSG00 000032883	acyl-CoA synthetase long-chain family member 3 Source MGI Symbol Acc MGI 1921455
A06	UPFM092898 6	ENSMUST00000 112904.7	Acs14	ENSMUSG00 000031278	acyl-CoA synthetase long-chain family member 4 Source MGI Symbol Acc MGI 1354713
A07	UPFM077690 2	ENSMUST00000 135683.2	Acsm1	ENSMUSG00 000033533	acyl-CoA synthetase medium-chain family member 1 Source MGI Symbol Acc MGI 2152200
A08	UPFM063933 6	ENSMUST00000 149598.1	Acsm3	ENSMUSG00 000030935	acyl-CoA synthetase medium-chain family member 3 Source MGI Symbol Acc MGI 99538
A09	UPFM084507 1	ENSMUST00000 190603.1	Agxt	ENSMUSG00 000026272	alanine-glyoxylate aminotransferase Source MGI Symbol Acc MGI 1329033
A10	UPFM073780 5	ENSMUST00000 141191.7	Alg5	ENSMUSG00 000036632	asparagine-linked glycosylation 5 (dolichyl-phosphate beta-glucosyltransferase) Source MGI Symbol Acc MGI 1913498
A11	UPFM096165 5	ENSMUST00000 003655.8	As3mt	ENSMUSG00 000003559	arsenic (+3 oxidation state) methyltransferase Source MGI Symbol Acc MGI 1929882
A12	UPFM075846 2	ENSMUST00000 166036.1	Baat	ENSMUSG00 000039653	bile acid-Coenzyme A amino acid N-acyltransferase Source MGI Symbol Acc MGI 106642
B01	UPFM074042 6	ENSMUST00000 149522.1	Kyat1	ENSMUSG00 000039648	kynurenine aminotransferase 1 Source MGI Symbol Acc MGI 1917516
B02	UPFM075721 2	ENSMUST00000 129987.1	Ces1d	ENSMUSG00 000056973	carboxylesterase 1D Source MGI Symbol Acc MGI 2148202
B03	UPFM082532 4	ENSMUST00000 176282.1	Ces1e	ENSMUSG00 000061959	carboxylesterase 1E Source MGI Symbol Acc MGI 95432
B04	UPFM092406 8	ENSMUST00000 044602.7	Ces1g	ENSMUSG00 000057074	carboxylesterase 1G Source MGI Symbol Acc MGI 88378
B05	UPFM068223 6	ENSMUST00000 055052.5	Ces2c	ENSMUSG00 000061825	carboxylesterase 2C Source MGI Symbol Acc MGI 2385905
B06	UPFM094116 3	ENSMUST00000 212009.1	Ces5a	ENSMUSG00 000058019	carboxylesterase 5A Source MGI Symbol Acc MGI 1915185
B07	UPFM074134 2	ENSMUST00000 044138.7	Chst7	ENSMUSG00 000037347	carbohydrate (N-acetylglucosamino) sulfotransferase 7 Source MGI Symbol Acc MGI 1891767
B08	UPFM087929 7	ENSMUST00000 165430.7	Comt	ENSMUSG00 000000326	catechol-O-methyltransferase Source MGI Symbol Acc MGI 88470
B09	UPFM096781 2	ENSMUST00000 030538.4	Ddost	ENSMUSG00 000028757	dolichyl-di-phosphooligosaccharide-protein glycotransferase Source MGI Symbol Acc MGI 1194508
B10	UPFM080434 5	ENSMUST00000 027108.12	Eef1b2	ENSMUSG00 000025967	eukaryotic translation elongation factor 1 beta 2 Source MGI Symbol Acc MGI 1929520
B11	UPFM082864 9	ENSMUST00000 111068.7	Ephx1	ENSMUSG00 000038776	epoxide hydrolase 1, microsomal Source MGI Symbol Acc MGI 95405
B12	UPFM061929 1	ENSMUST00000 225309.1	Ephx2	ENSMUSG00 000022040	epoxide hydrolase 2, cytoplasmic Source MGI Symbol Acc MGI 99500
C01	UPFM069670 9	ENSMUST00000 171583.1	Galnt1	ENSMUSG00 000000420	polypeptide N-acetylgalactosaminyltransferase 1 Source MGI Symbol Acc MGI 894693
C02	UPFM068504 1	ENSMUST00000 153563.1	Galnt3	ENSMUSG00 000026994	polypeptide N-acetylgalactosaminyltransferase 3 Source MGI Symbol Acc MGI 894695
C03	UPFM079058 3	ENSMUST00000 020359.6	Gamt	ENSMUSG00 000020150	guanidinoacetate methyltransferase Source MGI Symbol Acc MGI 1098221
C04	UPFM099600 7	ENSMUST00000 235184.1	Gcnt1	ENSMUSG00 000038843	glucosaminyl (N-acetyl) transferase 1, core 2 Source MGI Symbol Acc MGI 95676
C05	UPFM097699 8	ENSMUST00000 123173.1	Glyat	ENSMUSG00 000063683	glycine-N-acyltransferase Source MGI Symbol Acc MGI 2147502
C06	UPFM076099 3	ENSMUST00000 002846.8	Gnmt	ENSMUSG00 000002769	glycine N-methyltransferase Source MGI Symbol Acc MGI 1202304
C07	UPFM074737 4	ENSMUST00000 027067.14	Gsta3	ENSMUSG00 000025934	glutathione S-transferase, alpha 3 Source MGI Symbol Acc MGI 95856
C08	UPFM065559 8	ENSMUST00000 213215.1	Gsta4	ENSMUSG00 000032348	glutathione S-transferase, alpha 4 Source MGI Symbol Acc MGI 1309515
C09	UPFM087234 5	ENSMUST00000 204792.1	Gstk1	ENSMUSG00 000029864	glutathione S-transferase kappa 1 Source MGI Symbol Acc MGI 1923513
C10	UPFM066621 8	ENSMUST00000 012348.8	Gstm2	ENSMUSG00 000040562	glutathione S-transferase, mu 2 Source MGI Symbol Acc MGI 95861
	UPFM074073	ENSMUST00000		ENSMUSG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	6	004136.9	Gstm3	000004038	glutathione S-transferase, mu 3 Source MGI Symbol Acc MGI 106026
C12	UPFM062236 2	ENSMUST00000 178808.7	Gstm4	ENSMUSG00 000027890	glutathione S-transferase, mu 4 Source MGI Symbol Acc MGI 95862
D01	UPFM075072 7	ENSMUST00000 170058.7	Gstm5	ENSMUSG00 000004032	glutathione S-transferase, mu 5 Source MGI Symbol Acc MGI 1309466
D02	UPFM067053 1	ENSMUST00000 026050.7	Gsto1	ENSMUSG00 000025068	glutathione S-transferase omega 1 Source MGI Symbol Acc MGI 1342273
D03	UPFM091326 5	ENSMUST00000 120645.7	Gsto2	ENSMUSG00 000025069	glutathione S-transferase omega 2 Source MGI Symbol Acc MGI 1915464
D04	UPFM078306 5	ENSMUST00000 237893.1	Gstp1	ENSMUSG00 000060803	glutathione S-transferase, pi 1 Source MGI Symbol Acc MGI 95865
D05	UPFM078444 7	ENSMUST00000 139724.2	Gsth1	ENSMUSG00 000001663	glutathione S-transferase, theta 1 Source MGI Symbol Acc MGI 107379
D06	UPFM072879 5	ENSMUST00000 220440.1	Gsth2	ENSMUSG00 000033318	glutathione S-transferase, theta 2 Source MGI Symbol Acc MGI 106188
D07	UPFM096599 9	ENSMUST00000 232410.1	Has1	ENSMUSG00 000003665	hyaluronan synthase 1 Source MGI Symbol Acc MGI 106590
D08	UPFM073465 1	ENSMUST00000 114498.7	Hnmt	ENSMUSG00 000026986	histamine N-methyltransferase Source MGI Symbol Acc MGI 2153181
D09	UPFM096447 1	ENSMUST00000 003569.5	Inmt	ENSMUSG00 000003477	indolethylamine N-methyltransferase Source MGI Symbol Acc MGI 102963
D10	UPFM081287 8	ENSMUST00000 156607.7	Mgat1	ENSMUSG00 000020346	mannoside acetylglucosaminyltransferase 1 Source MGI Symbol Acc MGI 96973
D11	UPFM081393 3	ENSMUST00000 118091.7	Mgst1	ENSMUSG00 000008540	microsomal glutathione S-transferase 1 Source MGI Symbol Acc MGI 1913850
D12	UPFM073509 0	ENSMUST00000 159554.6	Mgst2	ENSMUSG00 000074604	microsomal glutathione S-transferase 2 Source MGI Symbol Acc MGI 2448481
E01	UPFM080107 5	ENSMUST00000 028005.2	Mgst3	ENSMUSG00 000026688	microsomal glutathione S-transferase 3 Source MGI Symbol Acc MGI 1913697
E02	UPFM076362 4	ENSMUST00000 150316.7	Naa20	ENSMUSG00 000002728	N(alpha)-acetyltransferase 20, NatB catalytic subunit Source MGI Symbol Acc MGI 1915127
E03	UPFM071643 2	ENSMUST00000 212171.1	Nat1	ENSMUSG00 000025588	N-acetyl transferase 1 Source MGI Symbol Acc MGI 97279
E04	UPFM065279 2	ENSMUST00000 163856.2	Nat2	ENSMUSG00 000051147	N-acetyltransferase 2 (arylamine N-acetyltransferase) Source MGI Symbol Acc MGI 109201
E05	UPFM076678 3	ENSMUST00000 119426.1	Nnmt	ENSMUSG00 000032271	nicotinamide N-methyltransferase Source MGI Symbol Acc MGI 1099443
E06	UPFM063067 7	ENSMUST00000 003947.8	Nqo1	ENSMUSG00 000003849	NAD(P)H dehydrogenase, quinone 1 Source MGI Symbol Acc MGI 103187
E07	UPFM065955 9	ENSMUST00000 220844.1	Nqo2	ENSMUSG00 000046949	N-ribosyldihyronicotinamide quinone reductase 2 Source MGI Symbol Acc MGI 104513
E08	UPFM068111 3	ENSMUST00000 041301.7	Pnmt	ENSMUSG00 000038216	phenylethanolamine-N-methyltransferase Source MGI Symbol Acc MGI 97724
E09	UPFM078255 2	ENSMUST00000 155718.7	Pomgnt1	ENSMUSG00 000028700	protein O-linked mannose beta 1,2-N-acetylglucosaminyltransferase Source MGI Symbol Acc MGI 1915523
E10	UPFM098001 7	ENSMUST00000 056046.9	Ptges	ENSMUSG00 000050737	prostaglandin E synthase Source MGI Symbol Acc MGI 1927593
E11	UPFM071658 6	ENSMUST00000 026318.14	Sat1	ENSMUSG00 000025283	spermidine/spermine N1-acetyl transferase 1 Source MGI Symbol Acc MGI 98233
E12	UPFM100249 5	ENSMUST00000 106372.10	Sult1a1	ENSMUSG00 000030711	sulfotransferase family 1A, phenol-preferring, member 1 Source MGI Symbol Acc MGI 102896
F01	UPFM086536 9	ENSMUST00000 117455.7	Sult1b1	ENSMUSG00 000029269	sulfotransferase family 1B, member 1 Source MGI Symbol Acc MGI 2136282
F02	UPFM068241 7	ENSMUST00000 024738.7	Sult1c1	ENSMUSG00 000023943	sulfotransferase family, cytosolic, 1C, member 1 Source MGI Symbol Acc MGI 102928
F03	UPFM097211 8	ENSMUST00000 023886.6	Sult1c2	ENSMUSG00 000023122	sulfotransferase family, cytosolic, 1C, member 2 Source MGI Symbol Acc MGI 1916333
F04	UPFM079087 3	ENSMUST00000 031201.8	Sult1e1	ENSMUSG00 000029272	sulfotransferase family 1E, member 1 Source MGI Symbol Acc MGI 98431
F05	UPFM095825 3	ENSMUST00000 210147.1	Sult2b1	ENSMUSG00 000003271	sulfotransferase family, cytosolic, 2B, member 1 Source MGI Symbol Acc MGI 1926342
F06	UPFM091825 7	ENSMUST00000 082365.5	Sult4a1	ENSMUSG00 000018865	sulfotransferase family 4A, member 1 Source MGI Symbol Acc MGI 1888971
F07	UPFM075604 6	ENSMUST00000 137998.1	Sult5a1	ENSMUSG00 000000739	sulfotransferase family 5A, member 1 Source MGI Symbol Acc MGI 1931463
F08	UPFM071232 6	ENSMUST00000 169544.7	Sult6b1	ENSMUSG00 000038045	sulfotransferase family, cytosolic, 6B, member 1 Source MGI Symbol Acc MGI 1920921
F09	UPFM082635 1	ENSMUST00000 124948.1	Tpmt	ENSMUSG00 000021376	thiopurine methyltransferase Source MGI Symbol Acc MGI 98812
F10	UPFM063543 4	ENSMUST00000 058659.8	Tst	ENSMUSG00 000044986	thiosulfate sulfurtransferase, mitochondrial Source MGI Symbol Acc MGI 98852

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFM076483 7	ENSMUST00000 128227.1	Ugcg	ENSMUSG00 000028381	UDP-glucose ceramide glucosyltransferase Source MGI Symbol Acc MGI 1332243
F12	UPFM087958 4	ENSMUST00000 073049.6	Ugt1a1	ENSMUSG00 000089960	UDP glucuronosyltransferase 1 family, polypeptide A1 Source MGI Symbol Acc MGI 98898
G01	UPFM066777 1	ENSMUST00000 049289.8	Ugt1a2	ENSMUSG00 000090171	UDP glucuronosyltransferase 1 family, polypeptide A2 Source MGI Symbol Acc MGI 3576049
G02	UPFM079541 4	ENSMUST00000 014263.5	Ugt1a6a	ENSMUSG00 000054545	UDP glucuronosyltransferase 1 family, polypeptide A6A Source MGI Symbol Acc MGI 2137698
G03	UPFM099906 9	ENSMUST00000 147854.5	Ugt2a1	ENSMUSG00 000106677	UDP glucuronosyltransferase 2 family, polypeptide A1 Source MGI Symbol Acc MGI 2149905
G04	UPFM072586 5	ENSMUST00000 031195.2	Ugt2a3	ENSMUSG00 000035780	UDP glucuronosyltransferase 2 family, polypeptide A3 Source MGI Symbol Acc MGI 1919344
G05	UPFM083079 0	ENSMUST00000 031183.2	Ugt2b1	ENSMUSG00 000035836	UDP glucuronosyltransferase 2 family, polypeptide B1 Source MGI Symbol Acc MGI 1919023
G06	UPFM067870 9	ENSMUST00000 031181.15	Ugt2b34	ENSMUSG00 000029260	UDP glucuronosyltransferase 2 family, polypeptide B34 Source MGI Symbol Acc MGI 2140962
G07	UPFM071871 0	ENSMUST00000 075858.3	Ugt2b37	ENSMUSG00 000057425	UDP glucuronosyltransferase 2 family, polypeptide B37 Source MGI Symbol Acc MGI 2148239
G08	UPFM069134 6	ENSMUST00000 072818.5	Ugt2b38	ENSMUSG00 000061906	UDP glucuronosyltransferase 2 family, polypeptide B38 Source MGI Symbol Acc MGI 2140794
G09	UPFM069674 5	ENSMUST00000 067790.6	Ugt2b5	ENSMUSG00 000054630	UDP glucuronosyltransferase 2 family, polypeptide B5 Source MGI Symbol Acc MGI 98900
G10	UPFM071210 3	ENSMUST00000 176173.1	Ugt3a1	ENSMUSG00 000072664	UDP glycosyltransferases 3 family, polypeptide A1 Source MGI Symbol Acc MGI 2146055
G11	UPFM080964 6	ENSMUST00000 198610.1	Ugt8a	ENSMUSG00 000032854	UDP galactosyltransferase 8A Source MGI Symbol Acc MGI 109522
G12	UPFM084844 7	ENSMUST00000 233449.1	Xdh	ENSMUSG00 000024066	xanthine dehydrogenase Source MGI Symbol Acc MGI 98973
H01	UPFM113294 6	ENSMUST00000 163829.1	Actb	ENSMUSG00 000029580	actin, beta Source MGI Symbol Acc MGI 87904
H02	UPFM113294 7	ENSMUST00000 102476.4	B2m	ENSMUSG00 000060802	beta-2 microglobulin Source MGI Symbol Acc MGI 88127
H03	UPFM113294 8	ENSMUST00000 117757.8	Gapdh	ENSMUSG00 000057666	glyceraldehyde-3-phosphate dehydrogenase Source MGI Symbol Acc MGI 95640
H04	UPFM113294 9	ENSMUST00000 026613.13	Gusb	ENSMUSG00 000025534	glucuronidase, beta Source MGI Symbol Acc MGI 95872
H05	UPFM113295 0	ENSMUST00000 166469.7	Hsp90ab1	ENSMUSG00 000023944	heat shock protein 90 alpha (cytosolic), class B member 1 Source MGI Symbol Acc MGI 96247
H06	UPFM112660 9	UPL_MGDC	MGDC	UPL_MGDC	Mouse Genomic DNA Contamination
H07	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H08	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H09	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H10	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control
H11	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control
H12	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control



## Related products

Product	Contents	Cat. no.
QuantiNova LNA Probe PCR QC Panel	These panels are designed to assess the quality of RNA samples before characterization using QuantiNova LNA Probe PCR Focus Panels; available in 96-well, 384-well, and Rotor-Disc 100 formats	249945
QuantiNova Reverse Transcription Kit (10)*	For 10 x 20 $\mu$ l reactions: 20 $\mu$ l 8x gDNA Removal Mix, 10 $\mu$ l Reverse Transcription Enzyme, 40 $\mu$ l Reverse Transcription Mix (containing RT primers), 20 $\mu$ l Internal Control RNA, 1.9 ml RNase-Free Water	205410
QuantiNova Probe RT-PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml QuantiNova Probe RT-PCR Master Mix, 20 $\mu$ l QuantiNova Probe RT Mix, 20 $\mu$ l Internal Control RNA, 500 $\mu$ l Yellow Template Dilution Buffer, 250 $\mu$ l ROX Reference Dye, 1.9 $\mu$ l RNase-Free Water	208352
QuantiNova Probe PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml 2x QuantiNova Probe PCR Master Mix, 500 $\mu$ l QuantiNova Yellow Template Dilution Buffer, 250 $\mu$ l QN ROX Reference Dye, 1.9 ml Water	208252

\*Larger kit sizes available.

The QuantiNova LNA Probe PCR Focus Panels are intended for molecular biology applications. These products are not intended for the diagnosis, prevention or treatment of a disease.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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