

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

## Mouse AMPK Signaling

Cat. no. 249955 UPMM-175ZA

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	Acaca	Acacb	Adipor1	Adipor2	Adra1a	Adra1b	Adra1d	Adra2a	Adra2b	Adra2c	Akt1	Akt2
B	Akt3	Akt1	Akt2	Akt3	Atg13	Cab39	Camkk1	Camkk2	Chna1	Chnb1	Cpt1a	Cpt1b
C	Cpt1c	Cpt2	Crtc2	Cry1	Eef2k	Eif4ebp1	Elavl1	Fasn	Foxa3	Gpam	Gpat2	Gys1
D	Gys2	Hmgcr	Hnf4a	Insr	Lepr	Lipe	Mlycd	Mtor	Pdpk1	Pfkfb1	Pfkfb2	Pfkfb3
E	Pfkfb4	Pnpla2	Ppargc1a	Ppargc1b	Ppp2ca	Ppp2cb	Ppp2r1a	Ppp2r1b	Ppp2r2b	Ptpa	Prkaa1	Prkaa2
F	Prkab1	Prkab2	Prkaa	Prkacb	Prkag1	Prkag2	Prkag3	Prkar1a	Prkar1b	Prkar2a	Prkar2b	Rb1cc1
G	Rps6kb1	Rps6kb2	Rplor	Slc2a4	Sreb1	Stk11	Strada	Stradb	Trp53	Tsc1	Tsc2	Ulk1
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	UPFM094854 9	ENSMUST00000 130012.8	Acaca	ENSMUSG00 000020532	acetyl-Coenzyme A carboxylase alpha Source MGI Symbol Acc MGI 108451
A02	UPFM077803 6	ENSMUST00000 143276.1	Acacb	ENSMUSG00 000042010	acetyl-Coenzyme A carboxylase beta Source MGI Symbol Acc MGI 2140940
A03	UPFM075897 6	ENSMUST00000 148822.1	Adipor1	ENSMUSG00 000026457	adiponectin receptor 1 Source MGI Symbol Acc MGI 1919924
A04	UPFM089965 7	ENSMUST00000 169744.7	Adipor2	ENSMUSG00 000030168	adiponectin receptor 2 Source MGI Symbol Acc MGI 93830
A05	UPFM094894 6	ENSMUST00000 159068.1	Adra1a	ENSMUSG00 000045875	adrenergic receptor, alpha 1a Source MGI Symbol Acc MGI 104773
A06	UPFM069335 9	ENSMUST00000 139906.1	Adra1b	ENSMUSG00 000050541	adrenergic receptor, alpha 1b Source MGI Symbol Acc MGI 104774
A07	UPFM067017 8	ENSMUST00000 103184.3	Adra1d	ENSMUSG00 000027335	adrenergic receptor, alpha 1d Source MGI Symbol Acc MGI 106673
A08	UPFM084795 8	ENSMUST00000 036700.6	Adra2a	ENSMUSG00 000033717	adrenergic receptor, alpha 2a Source MGI Symbol Acc MGI 87934
A09	UPFM070077 0	ENSMUST00000 104934.1	Adra2b	ENSMUSG00 000058620	adrenergic receptor, alpha 2b Source MGI Symbol Acc MGI 87935
A10	UPFM077820 0	ENSMUST00000 049545.6	Adra2c	ENSMUSG00 000045318	adrenergic receptor, alpha 2c Source MGI Symbol Acc MGI 87936
A11	UPFM063170 3	ENSMUST00000 068271.4	Ak1	ENSMUSG00 000026817	adenylate kinase 1 Source MGI Symbol Acc MGI 87977
A12	UPFM073433 2	ENSMUST00000 102604.10	Ak2	ENSMUSG00 000028792	adenylate kinase 2 Source MGI Symbol Acc MGI 87978
B01	UPFM098748 3	ENSMUST00000 025696.4	Ak3	ENSMUSG00 000024782	adenylate kinase 3 Source MGI Symbol Acc MGI 1860835
B02	UPFM082786 0	ENSMUST00000 139388.2	Akt1	ENSMUSG00 000001729	thymoma viral proto-oncogene 1 Source MGI Symbol Acc MGI 87986
B03	UPFM074464 2	ENSMUST00000 138459.7	Akt2	ENSMUSG00 000004056	thymoma viral proto-oncogene 2 Source MGI Symbol Acc MGI 104874
B04	UPFM085236 9	ENSMUST00000 111160.8	Akt3	ENSMUSG00 000019699	thymoma viral proto-oncogene 3 Source MGI Symbol Acc MGI 1345147
B05	UPFM083302 0	ENSMUST00000 126000.7	Atg13	ENSMUSG00 000027244	autophagy related 13 Source MGI Symbol Acc MGI 1196429
B06	UPFM075090 4	ENSMUST00000 130754.7	Cab39	ENSMUSG00 000036707	calcium binding protein 39 Source MGI Symbol Acc MGI 107438
B07	UPFM089268 2	ENSMUST00000 145834.1	Camkk1	ENSMUSG00 000020785	calcium/calmodulin-dependent protein kinase kinase 1, alpha Source MGI Symbol Acc MGI 1891766
B08	UPFM082637 7	ENSMUST00000 199830.4	Camkk2	ENSMUSG00 000029471	calcium/calmodulin-dependent protein kinase kinase 2, beta Source MGI Symbol Acc MGI 2444812
B09	UPFM097977 1	ENSMUST00000 028515.3	Chrna1	ENSMUSG00 000027107	cholinergic receptor, nicotinic, alpha polypeptide 1 (muscle) Source MGI Symbol Acc MGI 87885
B10	UPFM062186 5	ENSMUST00000 045971.8	Chrn1	ENSMUSG00 000041189	cholinergic receptor, nicotinic, beta polypeptide 1 (muscle) Source MGI Symbol Acc MGI 87890
B11	UPFM066697 5	ENSMUST00000 238027.1	Cpt1a	ENSMUSG00 000024900	carnitine palmitoyltransferase 1a, liver Source MGI Symbol Acc MGI 1098296
B12	UPFM095459 9	ENSMUST00000 109313.8	Cpt1b	ENSMUSG00 000078937	carnitine palmitoyltransferase 1b, muscle Source MGI Symbol Acc MGI 1098297
C01	UPFM100258 2	ENSMUST00000 212836.1	Cpt1c	ENSMUSG00 000007783	carnitine palmitoyltransferase 1c Source MGI Symbol Acc MGI 2446526
C02	UPFM091584 0	ENSMUST00000 106720.8	Cpt2	ENSMUSG00 000028607	carnitine palmitoyltransferase 2 Source MGI Symbol Acc MGI 109176
C03	UPFM065457 2	ENSMUST00000 130002.7	Crtc2	ENSMUSG00 000027936	CREB regulated transcription coactivator 2 Source MGI Symbol Acc MGI 1921593
C04	UPFM090788 9	ENSMUST00000 214675.1	Cry1	ENSMUSG00 000020038	cryptochrome 1 (photolyase-like) Source MGI Symbol Acc MGI 1270841
C05	UPFM078684 9	ENSMUST00000 128813.1	Eef2k	ENSMUSG00 000035064	eukaryotic elongation factor-2 kinase Source MGI Symbol Acc MGI 1195261
C06	UPFM094083 8	ENSMUST00000 210959.1	Eif4ebp1	ENSMUSG00 000031490	eukaryotic translation initiation factor 4E binding protein 1 Source MGI Symbol Acc MGI 103267
C07	UPFM094229 2	ENSMUST00000 209010.1	Elavl1	ENSMUSG00 000040028	ELAV (embryonic lethal, abnormal vision)-like 1 (Hu antigen R) Source MGI Symbol Acc MGI 1100851
C08	UPFM081265 2	ENSMUST00000 055655.8	Fasn	ENSMUSG00 000025153	fatty acid synthase Source MGI Symbol Acc MGI 95485
C09	UPFM088301 1	ENSMUST00000 056974.3	Foxo3	ENSMUSG00 000048756	forkhead box O3 Source MGI Symbol Acc MGI 1890081
C10	UPFM080577 2	ENSMUST00000 235957.1	Gpam	ENSMUSG00 000024978	glycerol-3-phosphate acyltransferase, mitochondrial Source MGI Symbol Acc MGI 109162
	UPFM076375	ENSMUST00000		ENSMUSG00	glycerol-3-phosphate acyltransferase 2, mitochondrial Source MGI Symbol Acc

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	1	062211.3	Gpat2	000046338	MGI 2684962
C12	UPFM065517 4	ENSMUST00000 003964.16	Gys1	ENSMUSG00 000003865	glycogen synthase 1, muscle Source MGI Symbol Acc MGI 101805
D01	UPFM075680 8	ENSMUST00000 032371.7	Gys2	ENSMUSG00 000030244	glycogen synthase 2 Source MGI Symbol Acc MGI 2385254
D02	UPFM086447 9	ENSMUST00000 168374.1	Hmgcr	ENSMUSG00 000021670	3-hydroxy-3-methylglutaryl-Coenzyme A reductase Source MGI Symbol Acc MGI 96159
D03	UPFM089220 5	ENSMUST00000 137449.1	Hnf4a	ENSMUSG00 000017950	hepatic nuclear factor 4, alpha Source MGI Symbol Acc MGI 109128
D04	UPFM062502 4	ENSMUST00000 207100.1	Insr	ENSMUSG00 000005534	insulin receptor Source MGI Symbol Acc MGI 96575
D05	UPFM097537 4	ENSMUST00000 128948.7	Lepr	ENSMUSG00 000057722	leptin receptor Source MGI Symbol Acc MGI 104993
D06	UPFM099108 5	ENSMUST00000 206861.1	Lipe	ENSMUSG00 000003123	lipase, hormone sensitive Source MGI Symbol Acc MGI 96790
D07	UPFM079844 5	ENSMUST00000 098367.4	Mlycd	ENSMUSG00 000074064	malonyl-CoA decarboxylase Source MGI Symbol Acc MGI 1928485
D08	UPFM062102 3	ENSMUST00000 057580.7	Mtor	ENSMUSG00 000028991	mechanistic target of rapamycin kinase Source MGI Symbol Acc MGI 1928394
D09	UPFM086863 3	ENSMUST00000 052462.12	Pdpk1	ENSMUSG00 000024122	3-phosphoinositide dependent protein kinase 1 Source MGI Symbol Acc MGI 1338068
D10	UPFM061838 8	ENSMUST00000 112713.2	Pfkfb1	ENSMUSG00 000025271	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 1 Source MGI Symbol Acc MGI 107816
D11	UPFM078798 0	ENSMUST00000 186867.6	Pfkfb2	ENSMUSG00 000026409	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2 Source MGI Symbol Acc MGI 107815
D12	UPFM072440 9	ENSMUST00000 195779.5	Pfkfb3	ENSMUSG00 000025773	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3 Source MGI Symbol Acc MGI 2181202
E01	UPFM082962 3	ENSMUST00000 200015.5	Pfkfb4	ENSMUSG00 000025648	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4 Source MGI Symbol Acc MGI 2687284
E02	UPFM084863 4	ENSMUST00000 064151.12	Pnpla2	ENSMUSG00 000025509	patatin-like phospholipase domain containing 2 Source MGI Symbol Acc MGI 1914103
E03	UPFM095044 2	ENSMUST00000 031059.13	Ppargc1a	ENSMUSG00 000029167	peroxisome proliferative activated receptor, gamma, coactivator 1 alpha Source MGI Symbol Acc MGI 1342774
E04	UPFM073812 1	ENSMUST00000 075299.12	Ppargc1b	ENSMUSG00 000033871	peroxisome proliferative activated receptor, gamma, coactivator 1 beta Source MGI Symbol Acc MGI 2444934
E05	UPFM098672 6	ENSMUST00000 020608.2	Ppp2ca	ENSMUSG00 000020349	protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform Source MGI Symbol Acc MGI 1321159
E06	UPFM071551 4	ENSMUST00000 009774.10	Ppp2cb	ENSMUSG00 000009630	protein phosphatase 2 (formerly 2A), catalytic subunit, beta isoform Source MGI Symbol Acc MGI 1321161
E07	UPFM081205 5	ENSMUST00000 136975.1	Ppp2r1a	ENSMUSG00 000007564	protein phosphatase 2, regulatory subunit A, alpha Source MGI Symbol Acc MGI 1926334
E08	UPFM076151 0	ENSMUST00000 175640.7	Ppp2r1b	ENSMUSG00 000032058	protein phosphatase 2, regulatory subunit A, beta Source MGI Symbol Acc MGI 1920949
E09	UPFM066818 0	ENSMUST00000 117687.7	Ppp2r2b	ENSMUSG00 000024500	protein phosphatase 2, regulatory subunit B, beta Source MGI Symbol Acc MGI 1920180
E10	UPFM098553 3	ENSMUST00000 136009.2	Ptpa	ENSMUSG00 000039515	protein phosphatase 2 protein activator Source MGI Symbol Acc MGI 1346006
E11	UPFM089479 8	ENSMUST00000 228218.1	Prkaa1	ENSMUSG00 000050697	protein kinase, AMP-activated, alpha 1 catalytic subunit Source MGI Symbol Acc MGI 2145955
E12	UPFM076091 8	ENSMUST00000 030243.7	Prkaa2	ENSMUSG00 000028518	protein kinase, AMP-activated, alpha 2 catalytic subunit Source MGI Symbol Acc MGI 1336173
F01	UPFM086994 2	ENSMUST00000 133098.8	Prkab1	ENSMUSG00 000029513	protein kinase, AMP-activated, beta 1 non-catalytic subunit Source MGI Symbol Acc MGI 1336167
F02	UPFM073071 8	ENSMUST00000 143927.7	Prkab2	ENSMUSG00 000038205	protein kinase, AMP-activated, beta 2 non-catalytic subunit Source MGI Symbol Acc MGI 1336185
F03	UPFM091850 5	ENSMUST00000 211558.1	Prkaca	ENSMUSG00 000005469	protein kinase, cAMP dependent, catalytic, alpha Source MGI Symbol Acc MGI 97592
F04	UPFM077653 7	ENSMUST00000 197616.1	Prkacb	ENSMUSG00 000005034	protein kinase, cAMP dependent, catalytic, beta Source MGI Symbol Acc MGI 97594
F05	UPFM086361 1	ENSMUST00000 230560.1	Prkag1	ENSMUSG00 000067713	protein kinase, AMP-activated, gamma 1 non-catalytic subunit Source MGI Symbol Acc MGI 108411
F06	UPFM081592 7	ENSMUST00000 114975.7	Prkag2	ENSMUSG00 000028944	protein kinase, AMP-activated, gamma 2 non-catalytic subunit Source MGI Symbol Acc MGI 1336153
F07	UPFM079657 6	ENSMUST00000 081636.12	Prkag3	ENSMUSG00 000006542	protein kinase, AMP-activated, gamma 3 non-catalytic subunit Source MGI Symbol Acc MGI 1891343
F08	UPFM061847 4	ENSMUST00000 106676.7	Prkar1a	ENSMUSG00 000020612	protein kinase, cAMP dependent regulatory, type I, alpha Source MGI Symbol Acc MGI 104878
F09	UPFM061880 5	ENSMUST00000 147505.7	Prkar1b	ENSMUSG00 000025855	protein kinase, cAMP dependent regulatory, type I beta Source MGI Symbol Acc MGI 97759
F10	UPFM090469 8	ENSMUST00000 195405.5	Prkar2a	ENSMUSG00 000032601	protein kinase, cAMP dependent regulatory, type II alpha Source MGI Symbol Acc MGI 108025

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFM097055 2	ENSMUST00000 036497.15	Prkar2b	ENSMUSG00 000002997	protein kinase, cAMP dependent regulatory, type II beta Source MGI Symbol Acc MGI 97760
F12	UPFM068053 9	ENSMUST00000 159906.7	Rb1cc1	ENSMUSG00 000025907	RB1 -inducible coiled-coil 1 Source MGI Symbol Acc MGI 1341850
G01	UPFM063338 0	ENSMUST00000 020824.14	Rps6kb1	ENSMUSG00 000020516	ribosomal protein S6 kinase, polypeptide 1 Source MGI Symbol Acc MGI 1270849
G02	UPFM081953 8	ENSMUST00000 155303.2	Rps6kb2	ENSMUSG00 000024830	ribosomal protein S6 kinase, polypeptide 2 Source MGI Symbol Acc MGI 1927343
G03	UPFM083792 7	ENSMUST00000 130049.7	Rptor	ENSMUSG00 000025583	regulatory associated protein of MTOR, complex 1 Source MGI Symbol Acc MGI 1921620
G04	UPFM070742 3	ENSMUST00000 018710.12	Slc2a4	ENSMUSG00 000018566	solute carrier family 2 (facilitated glucose transporter), member 4 Source MGI Symbol Acc MGI 95758
G05	UPFM063110 3	ENSMUST00000 149238.1	Srebf1	ENSMUSG00 000020538	sterol regulatory element binding transcription factor 1 Source MGI Symbol Acc MGI 107606
G06	UPFM079767 6	ENSMUST00000 213772.1	Stk11	ENSMUSG00 000003068	serine/threonine kinase 11 Source MGI Symbol Acc MGI 1341870
G07	UPFM094382 1	ENSMUST00000 103072.9	Strada	ENSMUSG00 000069631	STE20-related kinase adaptor alpha Source MGI Symbol Acc MGI 1919399
G08	UPFM067889 5	ENSMUST00000 114296.7	Stradb	ENSMUSG00 000026027	STE20-related kinase adaptor beta Source MGI Symbol Acc MGI 2144047
G09	UPFM066913 3	ENSMUST00000 171247.7	Trp53	ENSMUSG00 000059552	transformation related protein 53 Source MGI Symbol Acc MGI 98834
G10	UPFM074659 5	ENSMUST00000 156857.7	Tsc1	ENSMUSG00 000026812	tuberous sclerosis 1 Source MGI Symbol Acc MGI 1929183
G11	UPFM073190 6	ENSMUST00000 226398.1	Tsc2	ENSMUSG00 000002496	tuberous sclerosis 2 Source MGI Symbol Acc MGI 102548
G12	UPFM077125 8	ENSMUST00000 198561.1	Ulk1	ENSMUSG00 000029512	unc-51 like kinase 1 Source MGI Symbol Acc MGI 1270126
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.

Trademarks: QIAGEN®, LNA®, QuantiNova®, Sample to Insight® (QIAGEN Group); SYBR® (Life Technologies Corp.). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, are not to be considered unprotected by law.

09/2019 © 2019 QIAGEN, all rights reserved.