

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

## Mouse mTOR Signaling

Cat. no. 249955 UPMM-098ZA

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	Akt1	Akt1s1	Akt2	Akt3	Cab39	Cab39l	Cdc42	Chuk	Ddit4	Ddit4l	Deptor	Eif4b
B	Eif4e	Eif4ebp1	Eif4ebp2	Fkbp1a	Fkbp8	Gak3b	Hif1a	Hras	Hspa4	Igf1	Igfbp3	Ikbkb
C	Ilk	Ins2	Insr	Irs1	Mapk1	Mapk3	Mapkap1	Mlat8	Mtor	Myo1c	Pdjk1	Pik3c3
D	Pik3ca	Pik3cb	Pik3cd	Pik3cg	Pld1	Pld2	Ppp2ca	Ppp2r2b	Ptpa	Prkaa1	Prkaa2	Prkab1
E	Prkab2	Prkag1	Prkag2	Prkag3	Prkca	Prkcb	Prkcg	Prkce	Plen	Rheb	Rhoa	Rictor
F	Rps6	Rps6ka1	Rps6ka2	Rps6ka5	Rps6kb1	Rps6kb2	Rptor	Rraga	Rragb	Rragc	Rragd	Sgk1
G	Sik11	Stradb	Telo2	Trp53	Tsc1	Tsc2	Ulk1	Ulk2	Vegfa	Vegfb	Vegfc	Ywhaq
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	UPFM082786 0	ENSMUST00000 139388.2	Akt1	ENSMUSG00 000001729	thymoma viral proto-oncogene 1 Source MGI Symbol Acc MGI 87986
A02	UPFM066916 4	ENSMUST00000 107880.8	Akt1s1	ENSMUSG00 000011096	AKT1 substrate 1 (proline-rich) Source MGI Symbol Acc MGI 1914855
A03	UPFM074464 2	ENSMUST00000 138459.7	Akt2	ENSMUSG00 000004056	thymoma viral proto-oncogene 2 Source MGI Symbol Acc MGI 104874
A04	UPFM085236 9	ENSMUST00000 111160.8	Akt3	ENSMUSG00 000019699	thymoma viral proto-oncogene 3 Source MGI Symbol Acc MGI 1345147
A05	UPFM075090 4	ENSMUST00000 130754.7	Cab39	ENSMUSG00 000036707	calcium binding protein 39 Source MGI Symbol Acc MGI 107438
A06	UPFM067060 5	ENSMUST00000 022553.5	Cab39l	ENSMUSG00 000021981	calcium binding protein 39-like Source MGI Symbol Acc MGI 1914081
A07	UPFM073725 4	ENSMUST00000 030417.9	Cdc42	ENSMUSG00 000006699	cell division cycle 42 Source MGI Symbol Acc MGI 106211
A08	UPFM100719 5	ENSMUST00000 146861.1	Chuk	ENSMUSG00 000025199	conserved helix-loop-helix ubiquitous kinase Source MGI Symbol Acc MGI 99484
A09	UPFM097956 0	ENSMUST00000 020308.4	Ddit4	ENSMUSG00 000020108	DNA-damage-inducible transcript 4 Source MGI Symbol Acc MGI 1921997
A10	UPFM088250 9	ENSMUST00000 165845.1	Ddit4l	ENSMUSG00 000046818	DNA-damage-inducible transcript 4-like Source MGI Symbol Acc MGI 1920534
A11	UPFM085803 6	ENSMUST00000 226687.1	Deptor	ENSMUSG00 000022419	DEP domain containing MTOR-interacting protein Source MGI Symbol Acc MGI 2146322
A12	UPFM070097 0	ENSMUST00000 229400.1	Eif4b	ENSMUSG00 000058655	eukaryotic translation initiation factor 4B Source MGI Symbol Acc MGI 95304
B01	UPFM067965 2	ENSMUST00000 196990.4	Eif4e	ENSMUSG00 000028156	eukaryotic translation initiation factor 4E Source MGI Symbol Acc MGI 95305
B02	UPFM094083 8	ENSMUST00000 210959.1	Eif4ebp1	ENSMUSG00 0000031490	eukaryotic translation initiation factor 4E binding protein 1 Source MGI Symbol Acc MGI 103267
B03	UPFM077338 0	ENSMUST00000 167087.1	Eif4ebp2	ENSMUSG00 000020091	eukaryotic translation initiation factor 4E binding protein 2 Source MGI Symbol Acc MGI 109198
B04	UPFM079456 7	ENSMUST00000 143230.7	Fkbp1a	ENSMUSG00 000032966	FK506 binding protein 1a Source MGI Symbol Acc MGI 95541
B05	UPFM072485 4	ENSMUST00000 119353.8	Fkbp8	ENSMUSG00 000019428	FK506 binding protein 8 Source MGI Symbol Acc MGI 1341070
B06	UPFM098687 7	ENSMUST00000 114750.1	Gsk3b	ENSMUSG00 000022812	glycogen synthase kinase 3 beta Source MGI Symbol Acc MGI 1861437
B07	UPFM090240 6	ENSMUST00000 110461.7	Hif1a	ENSMUSG00 000021109	hypoxia inducible factor 1, alpha subunit Source MGI Symbol Acc MGI 106918
B08	UPFM099623 4	ENSMUST00000 124314.2	Hras	ENSMUSG00 000025499	Harvey rat sarcoma virus oncogene Source MGI Symbol Acc MGI 96224
B09	UPFM062819 4	ENSMUST00000 020630.7	Hspa4	ENSMUSG00 000020361	heat shock protein 4 Source MGI Symbol Acc MGI 1342292
B10	UPFM092941 8	ENSMUST00000 121161.7	Igf1	ENSMUSG00 000020053	insulin-like growth factor 1 Source MGI Symbol Acc MGI 96432
B11	UPFM096898 6	ENSMUST00000 020702.10	Igfbp3	ENSMUSG00 000020427	insulin-like growth factor binding protein 3 Source MGI Symbol Acc MGI 96438
B12	UPFM086154 1	ENSMUST00000 146212.7	Ikkb	ENSMUSG00 000031537	inhibitor of kappaB kinase beta Source MGI Symbol Acc MGI 1338071
C01	UPFM073967 8	ENSMUST00000 149695.7	Ilk	ENSMUSG00 000030890	integrin linked kinase Source MGI Symbol Acc MGI 1195267
C02	UPFM100267 5	ENSMUST00000 210288.1	Ins2	ENSMUSG00 000000215	insulin II Source MGI Symbol Acc MGI 96573
C03	UPFM062502 4	ENSMUST00000 207100.1	Insr	ENSMUSG00 000005534	insulin receptor Source MGI Symbol Acc MGI 96575
C04	UPFM068140 3	ENSMUST00000 069799.2	Irs1	ENSMUSG00 000055980	insulin receptor substrate 1 Source MGI Symbol Acc MGI 99454
C05	UPFM066625 9	ENSMUST00000 232611.1	Mapk1	ENSMUSG00 000063358	mitogen-activated protein kinase 1 Source MGI Symbol Acc MGI 1346858
C06	UPFM094029 9	ENSMUST00000 205657.1	Mapk3	ENSMUSG00 000063065	mitogen-activated protein kinase 3 Source MGI Symbol Acc MGI 1346859
C07	UPFM092975 9	ENSMUST00000 149383.7	Mapkap1	ENSMUSG00 000038696	mitogen-activated protein kinase associated protein 1 Source MGI Symbol Acc MGI 2444554
C08	UPFM077889 5	ENSMUST00000 234892.1	Mlst8	ENSMUSG00 000024142	MTOR associated protein, LST8 homolog ( <i>S. cerevisiae</i> ) Source MGI Symbol Acc MGI 1929514
C09	UPFM062102 3	ENSMUST00000 057580.7	Mtor	ENSMUSG00 000028991	mechanistic target of rapamycin kinase Source MGI Symbol Acc MGI 1928394
C10	UPFM096043 8	ENSMUST00000 102505.9	Myo1c	ENSMUSG00 000017774	myosin IC Source MGI Symbol Acc MGI 106612
	UPFM086863	ENSMUST00000		ENSMUSG00	3-phosphoinositide dependent protein kinase 1 Source MGI Symbol Acc MGI

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	3	052462.12	Pdpk1	000024122	1338068
C12	UPFM091116 0	ENSMUST00000 115812.9	Pik3c3	ENSMUSG00 000033628	phosphatidylinositol 3-kinase catalytic subunit type 3 Source MGI Symbol Acc MGI 2445019
D01	UPFM070843 8	ENSMUST00000 108243.7	Pik3ca	ENSMUSG00 000027665	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Source MGI Symbol Acc MGI 1206581
D02	UPFM092638 8	ENSMUST00000 035037.13	Pik3cb	ENSMUSG00 000032462	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta Source MGI Symbol Acc MGI 1922019
D03	UPFM092078 1	ENSMUST00000 134534.7	Pik3cd	ENSMUSG00 000039936	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta Source MGI Symbol Acc MGI 1098211
D04	UPFM080212 7	ENSMUST00000 053215.13	Pik3cg	ENSMUSG00 000020573	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma Source MGI Symbol Acc MGI 1353576
D05	UPFM074522 0	ENSMUST00000 067757.10	Pld1	ENSMUSG00 000027695	phospholipase D1 Source MGI Symbol Acc MGI 109585
D06	UPFM071189 4	ENSMUST00000 108557.9	Pld2	ENSMUSG00 000020828	phospholipase D2 Source MGI Symbol Acc MGI 892877
D07	UPFM098672 6	ENSMUST00000 020608.2	Ppp2ca	ENSMUSG00 000020349	protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform Source MGI Symbol Acc MGI 1321159
D08	UPFM066818 0	ENSMUST00000 117687.7	Ppp2r2b	ENSMUSG00 000024500	protein phosphatase 2, regulatory subunit B, beta Source MGI Symbol Acc MGI 1920180
D09	UPFM098553 3	ENSMUST00000 136009.2	Ptpa	ENSMUSG00 000039515	protein phosphatase 2 protein activator Source MGI Symbol Acc MGI 1346006
D10	UPFM089479 8	ENSMUST00000 228218.1	Prkaa1	ENSMUSG00 000050697	protein kinase, AMP-activated, alpha 1 catalytic subunit Source MGI Symbol Acc MGI 2145955
D11	UPFM076091 8	ENSMUST00000 030243.7	Prkaa2	ENSMUSG00 000028518	protein kinase, AMP-activated, alpha 2 catalytic subunit Source MGI Symbol Acc MGI 1336173
D12	UPFM086994 2	ENSMUST00000 133098.8	Prkab1	ENSMUSG00 000029513	protein kinase, AMP-activated, beta 1 non-catalytic subunit Source MGI Symbol Acc MGI 1336167
E01	UPFM073071 8	ENSMUST00000 143927.7	Prkab2	ENSMUSG00 000038205	protein kinase, AMP-activated, beta 2 non-catalytic subunit Source MGI Symbol Acc MGI 1336185
E02	UPFM086361 1	ENSMUST00000 230560.1	Prkag1	ENSMUSG00 000067713	protein kinase, AMP-activated, gamma 1 non-catalytic subunit Source MGI Symbol Acc MGI 108411
E03	UPFM081592 7	ENSMUST00000 114975.7	Prkag2	ENSMUSG00 000028944	protein kinase, AMP-activated, gamma 2 non-catalytic subunit Source MGI Symbol Acc MGI 1336153
E04	UPFM079657 6	ENSMUST00000 081636.12	Prkag3	ENSMUSG00 000006542	protein kinase, AMP-activated, gamma 3 non-catalytic subunit Source MGI Symbol Acc MGI 1891343
E05	UPFM091650 2	ENSMUST00000 100302.3	Prkca	ENSMUSG00 000050965	protein kinase C, alpha Source MGI Symbol Acc MGI 97595
E06	UPFM080540 4	ENSMUST00000 143692.7	Prkcb	ENSMUSG00 000052889	protein kinase C, beta Source MGI Symbol Acc MGI 97596
E07	UPFM065985 0	ENSMUST00000 100301.10	Prkcg	ENSMUSG00 000078816	protein kinase C, gamma Source MGI Symbol Acc MGI 97597
E08	UPFM068206 2	ENSMUST00000 136986.1	Prkce	ENSMUSG00 000045038	protein kinase C, epsilon Source MGI Symbol Acc MGI 97599
E09	UPFM089742 6	ENSMUST00000 013807.7	Pten	ENSMUSG00 000013663	phosphatase and tensin homolog Source MGI Symbol Acc MGI 109583
E10	UPFM080993 1	ENSMUST00000 146310.1	Rheb	ENSMUSG00 000028945	Ras homolog enriched in brain Source MGI Symbol Acc MGI 97912
E11	UPFM080926 1	ENSMUST00000 007959.13	Rhoa	ENSMUSG00 000007815	ras homolog family member A Source MGI Symbol Acc MGI 1096342
E12	UPFM100102 6	ENSMUST00000 228266.1	Rictor	ENSMUSG00 000050310	RPTOR independent companion of MTOR, complex 2 Source MGI Symbol Acc MGI 1926007
F01	UPFM085351 3	ENSMUST00000 123229.7	Rps6	ENSMUSG00 000028495	ribosomal protein S6 Source MGI Symbol Acc MGI 98159
F02	UPFM087963 3	ENSMUST00000 105894.10	Rps6ka1	ENSMUSG00 000003644	ribosomal protein S6 kinase polypeptide 1 Source MGI Symbol Acc MGI 104558
F03	UPFM084623 9	ENSMUST00000 232527.1	Rps6ka2	ENSMUSG00 000023809	ribosomal protein S6 kinase, polypeptide 2 Source MGI Symbol Acc MGI 1342290
F04	UPFM063925 4	ENSMUST00000 043599.6	Rps6ka5	ENSMUSG00 000021180	ribosomal protein S6 kinase, polypeptide 5 Source MGI Symbol Acc MGI 1920336
F05	UPFM063338 0	ENSMUST00000 020824.14	Rps6kb1	ENSMUSG00 000020516	ribosomal protein S6 kinase, polypeptide 1 Source MGI Symbol Acc MGI 1270849
F06	UPFM081953 8	ENSMUST00000 155303.2	Rps6kb2	ENSMUSG00 000024830	ribosomal protein S6 kinase, polypeptide 2 Source MGI Symbol Acc MGI 1927343
F07	UPFM083792 7	ENSMUST00000 130049.7	Rptor	ENSMUSG00 000025583	regulatory associated protein of MTOR, complex 1 Source MGI Symbol Acc MGI 1921620
F08	UPFM076053 3	ENSMUST00000 091064.7	Rraga	ENSMUSG00 000070934	Ras-related GTP binding A Source MGI Symbol Acc MGI 1915691
F09	UPFM062052 8	ENSMUST00000 039720.10	Rragb	ENSMUSG00 000041658	Ras-related GTP binding B Source MGI Symbol Acc MGI 3038613
F10	UPFM076061 8	ENSMUST00000 133445.7	Rragc	ENSMUSG00 000028646	Ras-related GTP binding C Source MGI Symbol Acc MGI 1858751

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFM070469 9	ENSMUST00000 084747.5	Rragd	ENSMUSG00 000028278	Ras-related GTP binding D Source MGI Symbol Acc MGI 1098604
F12	UPFM086165 8	ENSMUST00000 020145.11	Sgk1	ENSMUSG00 000019970	serum/glucocorticoid regulated kinase 1 Source MGI Symbol Acc MGI 1340062
G01	UPFM079767 6	ENSMUST00000 213772.1	Slk11	ENSMUSG00 000003068	serine/threonine kinase 11 Source MGI Symbol Acc MGI 1341870
G02	UPFM067889 5	ENSMUST00000 114296.7	Stradb	ENSMUSG00 000026027	STE20-related kinase adaptor beta Source MGI Symbol Acc MGI 2144047
G03	UPFM097165 6	ENSMUST00000 155607.7	Telo2	ENSMUSG00 000024170	telomere maintenance 2 Source MGI Symbol Acc MGI 1918968
G04	UPFM066913 3	ENSMUST00000 171247.7	Trp53	ENSMUSG00 000059552	transformation related protein 53 Source MGI Symbol Acc MGI 98834
G05	UPFM074659 5	ENSMUST00000 156857.7	Tsc1	ENSMUSG00 000026812	tuberous sclerosis 1 Source MGI Symbol Acc MGI 1929183
G06	UPFM073190 6	ENSMUST00000 226398.1	Tsc2	ENSMUSG00 000002496	tuberous sclerosis 2 Source MGI Symbol Acc MGI 102548
G07	UPFM077125 8	ENSMUST00000 198561.1	Ulk1	ENSMUSG00 000029512	unc-51 like kinase 1 Source MGI Symbol Acc MGI 1270126
G08	UPFM086253 6	ENSMUST00000 157049.1	Ulk2	ENSMUSG00 000004798	unc-51 like kinase 2 Source MGI Symbol Acc MGI 1352758
G09	UPFM117296 6	ENSMUST00000 214739.1	Vegfa	ENSMUSG00 000023951	vascular endothelial growth factor A Source MGI Symbol Acc MGI 103178
G10	UPFM085761 6	ENSMUST00000 025914.6	Vegfb	ENSMUSG00 000024962	vascular endothelial growth factor B Source MGI Symbol Acc MGI 106199
G11	UPFM067669 6	ENSMUST00000 210831.1	Vegfc	ENSMUSG00 000031520	vascular endothelial growth factor C Source MGI Symbol Acc MGI 109124
G12	UPFM068152 4	ENSMUST00000 135088.8	Ywhaq	ENSMUSG00 000076432	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein theta Source MGI Symbol Acc MGI 891963
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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