

# QuantiNova® LNA® PCR Focus Panels (Rotor-Gene® Format)

## Rat mTOR Signaling

Cat. no. 249950 SBRN-098ZR

For study focus gene expression analysis

### Shipping and storage

QuantiNova LNA PCR Focus Panels are shipped at ambient temperature. Immediately upon receipt, they should be stored 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 PCR Focus Panels should be used together with the QuantiNova Reverse Transcription Kit for cDNA synthesis and the QuantiNova SYBR® Green PCR Kit (Mastermix) for PCR.

### Panel layout (Rotor-Gene): QuantiNova LNA PCR Focus Panel

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc® (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance. Refer to the QuantiNova LNA PCR System Handbook at [www.qiagen.com](http://www.qiagen.com) for further details.

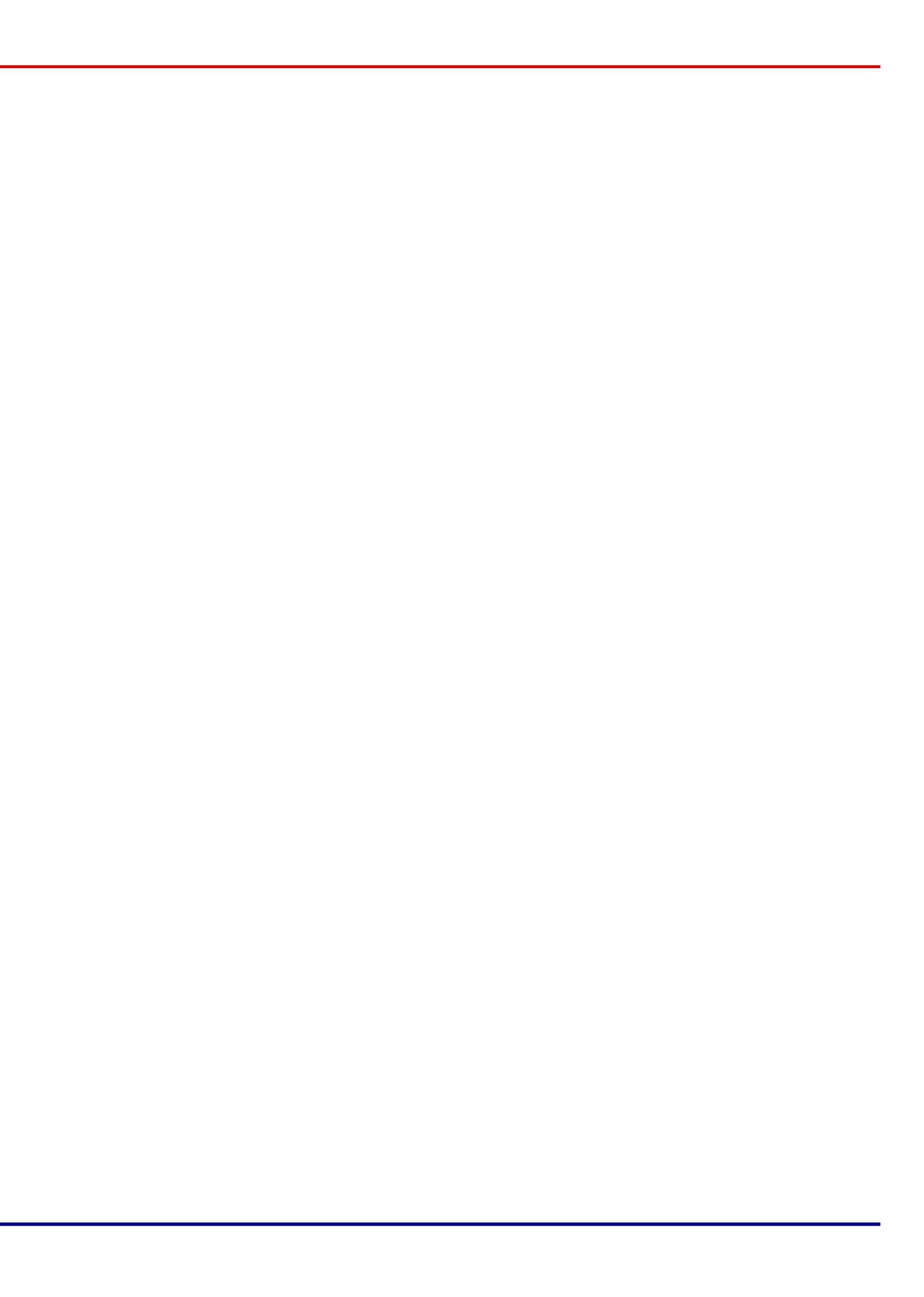
	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	Akt1	Akt1s1	Akt2	Akt3	Cab39	Cab39l	Rps6ka4	Cdc42	Chuk	Ddit4	Ddit4l	Eif4b
<b>B</b>	Eif4e	Eif4ebp1	Eif4ebp2	Fkbp1a	Fkbp8	Gsk3b	Hif1a	Hras	Hspa4	Igf1	Igfbp3	Ikbkb
<b>C</b>	Ilk	Ins2	Insr	Irs1	Kras	Mapk1	Mapk3	Mapkap1	Mist8	Mtor	Myo1c	Nras
<b>D</b>	Pdpk1	Pik3c3	Pik3ca	Pik3cb	Pik3cd	Pik3cg	Pik3r1	Pik3r2	Plid1	Plid2	LOC103694903	Ppp2r2b
<b>E</b>	Ptpa	Prkaa1	Prkaa2	Prkab1	Prkab2	Kmt2d	Prkag2	Prkag3	Prkca	Prkcb	Prkce	Prkcg
<b>F</b>	Pten	Rheb	Rhoa	LOC100911372	Rps6ka1	Rps6ka2	Rps6ka5	Rps6kb1	Rps6kb2	Rptor	Rraga	LOC108348096
<b>G</b>	Rragc	Rragd	Sgk1	Slk11	Tp53	Tsc1	Tsc2	Ulk1	Vegfa	Vegfb	Vegfc	Ywhaq
<b>H</b>	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	QIC	QIC	QIC	QIC	PPC	PPC

## Gene table: QuantiNova LNA PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	SBR1163078	ENSRNOT00000031164.3	Akt1	ENSRNOG0000028629	AKT serine/threonine kinase 1 Source RGD Symbol Acc 2081
A02	SBR1094489	ENSRNOT00000027478.6	Akt1s1	ENSRNOG0000020289	AKT1 substrate 1 Source RGD Symbol Acc 1312049
A03	SBR1190995	ENSRNOT00000025303.3	Akt2	ENSRNOG0000018677	AKT serine/threonine kinase 2 Source RGD Symbol Acc 2082
A04	SBR1132835	ENSRNOT00000085648.1	Akt3	ENSRNOG0000021497	AKT serine/threonine kinase 3 Source RGD Symbol Acc 62390
A05	SBR1126334	ENSRNOT00000085332.1	Cab39	ENSRNOG0000017297	calcium binding protein 39 Source RGD Symbol Acc 1306390
A06	SBR1191344	ENSRNOT00000016162.6	Cab39l	ENSRNOG0000011603	calcium binding protein 39-like Source RGD Symbol Acc 1308945
A07	SBR1116088	ENSRNOT00000028678.7	Rps6ka4	ENSRNOG0000021117	ribosomal protein S6 kinase A4 Source RGD Symbol Acc 1307277
A08	SBR1159831	ENSRNOT00000029025.5	Cdc42	ENSRNOG0000013536	cell division cycle 42 Source RGD Symbol Acc 71043
A09	SBR1132111	ENSRNOT00000030782.4	Chuk	ENSRNOG0000022485	conserved helix-loop-helix ubiquitous kinase Source RGD Symbol Acc 1306661
A10	SBR1144588	ENSRNOT00000085026.1	Ddit4	ENSRNOG0000057078	DNA-damage-inducible transcript 4 Source RGD Symbol Acc 621731
A11	SBR1185886	ENSRNOT00000013661.4	Ddit4l	ENSRNOG0000010047	DNA-damage-inducible transcript 4-like 2 Source RGD Symbol Acc 619738
A12	SBR1204313	ENSRNOT00000014033.5	Eif4b	ENSRNOG0000010103	eukaryotic translation initiation factor 4B Source RGD Symbol Acc 1306479
B01	SBR1151863	ENSRNOT00000090526.2	Eif4e	ENSRNOG0000052343	eukaryotic translation initiation factor 4E Source RGD Symbol Acc 69647
B02	SBR1186274	ENSRNOT00000016885.5	Eif4ebp1	ENSRNOG0000012582	eukaryotic translation initiation factor 4E binding protein 1 Source RGD Symbol Acc 620259
B03	SBR1129582	ENSRNOT00000082448.1	Eif4ebp2	ENSRNOG0000055391	eukaryotic translation initiation factor 4E binding protein 2 Source RGD Symbol Acc 1310824
B04	SBR1094802	ENSRNOT00000012608.4	Fkbp1a	ENSRNOG0000008822	FKBP prolyl isomerase 1A Source RGD Symbol Acc 2617
B05	SBR1190984	ENSRNOT00000077756.1	Fkbp8	ENSRNOG0000058359	FKBP prolyl isomerase 8 Source RGD Symbol Acc 1308670
B06	SBR1155736	ENSRNOT00000077612.1	Gsk3b	ENSRNOG0000002833	glycogen synthase kinase 3 beta Source RGD Symbol Acc 70982
B07	SBR1184753	ENSRNOT00000077935.1	Hif1a	ENSRNOG0000008292	hypoxia inducible factor 1 subunit alpha Source RGD Symbol Acc 61928
B08	SBR1204952	ENSRNOT00000079464.1	Hras	ENSRNOG0000016611	HRas proto-oncogene, GTPase Source RGD Symbol Acc 2827
B09	SBR1138708	ENSRNOT00000023628.3	Hspa4	ENSRNOG0000016596	heat shock protein family A member 4 Source RGD Symbol Acc 628878
B10	SBR1185495	ENSRNOT00000038780.6	Igf1	ENSRNOG0000004517	insulin-like growth factor 1 Source RGD Symbol Acc 2868
B11	SBR1152057	ENSRNOT00000088355.1	Igfbp3	ENSRNOG00000061910	insulin-like growth factor binding protein 3 Source RGD Symbol Acc 2874
B12	SBR1133299	ENSRNOT00000025851.4	Ikbkb	ENSRNOG0000019073	inhibitor of nuclear factor kappa B kinase subunit beta Source RGD Symbol Acc 621375
C01	SBR1108626	ENSRNOT00000025906.4	Ilk	ENSRNOG0000018993	integrin-linked kinase Source RGD Symbol Acc 620063
C02	SBR1158339	ENSRNOT00000027656.3	Ins2	ENSRNOG0000020405	insulin 2 Source RGD Symbol Acc 2916
C03	SBR1131460	ENSRNOT00000041155.3	Insr	ENSRNOG0000029986	insulin receptor Source RGD Symbol Acc 2917
C04	SBR1132302	ENSRNOT00000019579.5	Irs1	ENSRNOG0000014597	insulin receptor substrate 1 Source RGD Symbol Acc 2922
C05	SBR1196578	ENSRNOT00000012588.4	Kras	ENSRNOG0000009338	KRAS proto-oncogene, GTPase Source RGD Symbol Acc 2981
C06	SBR1202944	ENSRNOT00000002533.7	Mapk1	ENSRNOG0000001849	mitogen activated protein kinase 1 Source RGD Symbol Acc 70500
C07	SBR1209281	ENSRNOT00000087625.1	Mapk3	ENSRNOG0000053583	mitogen activated protein kinase 3 Source RGD Symbol Acc 3046
C08	SBR1107563	ENSRNOT00000023889.6	Mapkap1	ENSRNOG0000017583	mitogen-activated protein kinase associated protein 1 Source RGD Symbol Acc 1305363
C09	SBR1123839	ENSRNOT00000014269.4	Mlst8	ENSRNOG0000009667	MTOR associated protein, LST8 homolog Source RGD Symbol Acc 69242
C10	SBR1220576	ENSRNOT00000014167.7	Mtor	ENSRNOG0000009615	mechanistic target of rapamycin kinase Source RGD Symbol Acc 68371
		ENSRNOT000000		ENSRNOG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1121667	036666.5	Myo1c	000004072	myosin 1C Source RGD Symbol Acc 620443
C12	SBR1160671	ENSRNOT00000039572.3	Nras	ENSRNOG0000023079	NRAS proto-oncogene, GTPase Source RGD Symbol Acc 3205
D01	SBR1133385	ENSRNOT00000067660.1	Pdpk1	ENSRNOG0000006136	3-phosphoinositide dependent protein kinase-1 Source RGD Symbol Acc 620307
D02	SBR1160587	ENSRNOT00000066816.2	Pik3c3	ENSRNOG0000017840	phosphatidylinositol 3-kinase, catalytic subunit type 3 Source RGD Symbol Acc 620899
D03	SBR1193587	ENSRNOT00000083720.1	Pik3ca	ENSRNOG0000056371	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha Source RGD Symbol Acc 620916
D04	SBR1157450	ENSRNOT00000022179.4	Pik3cb	ENSRNOG0000016384	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit beta Source RGD Symbol Acc 620917
D05	SBR1143206	ENSRNOT00000066179.2	Pik3cd	ENSRNOG0000016846	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit delta Source RGD Symbol Acc 1310990
D06	SBR1140914	ENSRNOT00000012487.5	Pik3cg	ENSRNOG0000009385	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit gamma Source RGD Symbol Acc 1306468
D07	SBR1155861	ENSRNOT00000025687.7	Pik3r1	ENSRNOG0000018903	phosphoinositide-3-kinase regulatory subunit 1 Source RGD Symbol Acc 3329
D08	SBR1151465	ENSRNOT00000026210.5	Pik3r2	ENSRNOG0000019228	phosphoinositide-3-kinase regulatory subunit 2 Source RGD Symbol Acc 68341
D09	SBR1102001	ENSRNOT00000091545.1	Pld1	ENSRNOG0000028156	phospholipase D1 Source RGD Symbol Acc 3349
D10	SBR1169718	ENSRNOT00000056998.4	Pld2	ENSRNOG0000019604	phospholipase D2 Source RGD Symbol Acc 3350
D11	SBR1176421	ENSRNOT00000007621.5	LOC103694903	ENSRNOG0000005389	serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform Source RGD Symbol Acc 9257421
D12	SBR1117650	ENSRNOT00000041188.4	Ppp2r2b	ENSRNOG0000018851	protein phosphatase 2, regulatory subunit B, beta Source RGD Symbol Acc 631441
E01	SBR1174361	ENSRNOT00000024914.5	Ptpa	ENSRNOG0000018457	protein phosphatase 2 phosphatase activator Source RGD Symbol Acc 1308354
E02	SBR1120460	ENSRNOT00000017626.5	Prkaa1	ENSRNOG0000012799	protein kinase AMP-activated catalytic subunit alpha 1 Source RGD Symbol Acc 3387
E03	SBR1166352	ENSRNOT00000010680.3	Prkaa2	ENSRNOG0000007706	protein kinase AMP-activated catalytic subunit alpha 2 Source RGD Symbol Acc 620893
E04	SBR1162563	ENSRNOT00000001508.3	Prkab1	ENSRNOG0000001142	protein kinase AMP-activated non-catalytic subunit beta 1 Source RGD Symbol Acc 71057
E05	SBR1188517	ENSRNOT00000063783.2	Prkab2	ENSRNOG0000018166	protein kinase AMP-activated non-catalytic subunit beta 2 Source RGD Symbol Acc 620905
E06	SBR1161274	ENSRNOT00000083354.1	Kmt2d	ENSRNOG0000061499	protein kinase AMP-activated non-catalytic subunit gamma 1 Source RGD Symbol Acc 3388
E07	SBR1175590	ENSRNOT00000067183.3	Prkag2	ENSRNOG0000009085	protein kinase AMP-activated non-catalytic subunit gamma 2 Source RGD Symbol Acc 727782
E08	SBR1122356	ENSRNOT00000023365.5	Prkag3	ENSRNOG0000017248	protein kinase AMP-activated non-catalytic subunit gamma 3 Source RGD Symbol Acc 1308698
E09	SBR1097570	ENSRNOT00000055073.4	Prkca	ENSRNOG0000003491	protein kinase C, alpha Source RGD Symbol Acc 3395
E10	SBR1121471	ENSRNOT00000016418.6	Prkcb	ENSRNOG0000012061	protein kinase C, beta Source RGD Symbol Acc 3396
E11	SBR1097999	ENSRNOT00000020959.7	Prkce	ENSRNOG0000015603	protein kinase C, epsilon Source RGD Symbol Acc 61925
E12	SBR1199108	ENSRNOT00000080032.1	Prkcg	ENSRNOG0000054371	protein kinase C, gamma Source RGD Symbol Acc 3397
F01	SBR1174124	ENSRNOT00000028143.3	Pten	ENSRNOG0000020723	phosphatase and tensin homolog Source RGD Symbol Acc 61995
F02	SBR1173372	ENSRNOT00000071737.2	Rheb	ENSRNOG0000050578	Ras homolog, mTORC1 binding Source RGD Symbol Acc 621840
F03	SBR1125110	ENSRNOT00000071664.2	Rhoa	ENSRNOG0000050519	ras homolog family member A Source RGD Symbol Acc 619921
F04	SBR1189039	ENSRNOT00000073270.2	LOC100911372	ENSRNOG0000049025	40S ribosomal protein S6-like Source RGD Symbol Acc 6493116
F05	SBR1200224	ENSRNOT00000077248.1	Rps6ka1	ENSRNOG0000042411	ribosomal protein S6 kinase A1 Source RGD Symbol Acc 620675
F06	SBR1213240	ENSRNOT00000017809.5	Rps6ka2	ENSRNOG0000013194	ribosomal protein S6 kinase A2 Source RGD Symbol Acc 620676
F07	SBR1117694	ENSRNOT00000064716.2	Rps6ka5	ENSRNOG0000004362	ribosomal protein S6 kinase A5 Source RGD Symbol Acc 1308336
F08	SBR1105085	ENSRNOT00000005226.4	Rps6kb1	ENSRNOG0000003919	ribosomal protein S6 kinase B1 Source RGD Symbol Acc 620683
F09	SBR1133483	ENSRNOT00000029580.5	Rps6kb2	ENSRNOG0000021689	ribosomal protein S6 kinase B2 Source RGD Symbol Acc 1305144
F10	SBR1160593	ENSRNOT00000005337.6	Rptor	ENSRNOG0000003821	regulatory associated protein of MTOR, complex 1 Source RGD Symbol Acc 1311784

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1215108	ENSRNOT00000009225.6	Rraga	ENSRNOG0000007051	Ras-related GTP binding A Source RGD Symbol Acc 619804
F12	SBR1110430	ENSRNOT00000004235.6	LOC108348096	ENSRNOG0000003160	Ras-related GTP binding B Source RGD Symbol Acc 619805
G01	SBR1161829	ENSRNOT00000023514.5	Rragc	ENSRNOG0000017426	Ras-related GTP binding C Source RGD Symbol Acc 1311760
G02	SBR1174958	ENSRNOT00000068028.2	Rragd	ENSRNOG0000007331	Ras-related GTP binding D Source RGD Symbol Acc 1310007
G03	SBR1176764	ENSRNOT00000016121.5	Sgk1	ENSRNOG0000011815	serum/glucocorticoid regulated kinase 1 Source RGD Symbol Acc 3668
G04	SBR1146121	ENSRNOT00000060683.3	Stk11	ENSRNOG0000014287	serine/threonine kinase 11 Source RGD Symbol Acc 1308653
G05	SBR1172374	ENSRNOT00000046490.3	Tp53	ENSRNOG0000010756	tumor protein p53 Source RGD Symbol Acc 3889
G06	SBR1131530	ENSRNOT00000016904.3	Tsc1	ENSRNOG0000011470	TSC complex subunit 1 Source RGD Symbol Acc 620124
G07	SBR1097853	ENSRNOT00000016221.3	Tsc2	ENSRNOG0000011375	TSC complex subunit 2 Source RGD Symbol Acc 3908
G08	SBR1188200	ENSRNOT00000056790.3	Ulk1	ENSRNOG0000037505	unc-51 like autophagy activating kinase 1 Source RGD Symbol Acc 1589743
G09	SBR1108862	ENSRNOT00000044163.4	Vegfa	ENSRNOG0000019598	vascular endothelial growth factor A Source RGD Symbol Acc 619991
G10	SBR1120785	ENSRNOT00000050891.3	Vegfb	ENSRNOG0000021156	vascular endothelial growth factor B Source RGD Symbol Acc 619799
G11	SBR1127903	ENSRNOT00000015529.4	Vegfc	ENSRNOG0000011416	vascular endothelial growth factor C Source RGD Symbol Acc 619800
G12	SBR1135023	ENSRNOT00000077786.1	Ywhaq	ENSRNOG0000051650	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta Source RGD Symbol Acc 3979
H01	SBR1220567	ENSRNOT00000042459.4	Actb	ENSRNOG0000034254	actin, beta Source RGD Symbol Acc 628837
H02	SBR1220568	ENSRNOT00000023017.5	B2m	ENSRNOG0000017123	beta-2 microglobulin Source RGD Symbol Acc 2189
H03	SBR1225377	ENSRNOT00000065935.3	Hprt1	ENSRNOG0000048561	hypoxanthine phosphoribosyltransferase 1 Source RGD Symbol Acc 2826
H04	SBR1122313	ENSRNOT00000017468.2	Ldha	ENSRNOG0000013009	lactate dehydrogenase A Source RGD Symbol Acc 2996
H05	SBR1220572	ENSRNOT00000018820.5	Rplp1	ENSRNOG0000013874	ribosomal protein lateral stalk subunit P1 Source RGD Symbol Acc 621774
H06	SBR1218555	Sybr_RGDC	RGDC	Sybr_RGDC	Rat Genomic DNA Contamination
H07	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H08	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H09	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H10	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control
H11	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control
H12	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control



## Related products

Product	Contents	Cat. no.
QuantiNova LNA PCR QC Panel	These panels are designed to assess the quality of RNA samples before characterization using QuantiNova LNA PCR Focus Panels; available in 96-well, 384-well, and Rotor-Disc 100 formats	249940
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 SYBR Green RT-PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml QuantiNova SYBR Green RT-PCR Master Mix, 20 $\mu$ l QuantiNova SYBR Green 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	208152
QuantiNova SYBR Green PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 $\mu$ l QuantiNova Yellow Template Dilution Buffer, 250 $\mu$ l QN ROX Reference Dye, 1.9 ml Water	208052

\*Larger kit sizes available.

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

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