

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

## Rat Autophagy

Cat. no. 249950 SBRN-084ZR

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
A	Akt1	Ambra1	App	Arsa	Atg12	Atg16l1	Atg16l2	Atg3	Atg4b	Atg4c	Atg5	Atg7
B	Atg9a	Bad	Bak1	Bax	Bcl2	Bcl2l1	Becn1	Bid	Bnip3	Casp3	Casp8	Npc1
C	Cdkn1b	Cdkn2a	Cln3	Ctsb	Ctsd	Ctss	Cxcr4	Dapk1	Dram2	Eif2ak3	Eif4g1	Esr1
D	Fadd	Fos	Gaa	Gabarap	Gabarapl2	Hdac1	Hdac6	Hgs	Hsp90aa1	Htt	Ifng	Igf1
E	Ins2	Irgm	Lamp1	Map11c3a	Map11c3b	Mapk14	Mapk8	Mapt	Mtor	Nrb1	AABR0700151 9_1	Park7
F	Pik3c3	Pik3cg	Pik3r4	Pim2	Pink1	Prkaa1	Psen1	Pten	Mxd3	Rb1	Rb1cc1	Atg101
G	Rgs19	Rps6kb1	Snca	Sqstm1	Tgfb1	Tgm2	Tm9sf1	LOC1036943 80	Tnfrsf10	Tp53	Ulk1	Wipi1
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	QIC	QIC	QIC	PPC	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	SBR1148300	ENSRNOT00000085614.1	Ambra1	ENSRNOG0000017422	autophagy and beclin 1 regulator 1 Source RGD Symbol Acc 621330
A03	SBR1129904	ENSRNOT00000048854.6	App	ENSRNOG0000006997	amyloid beta precursor protein Source RGD Symbol Acc 2139
A04	SBR1125582	ENSRNOT00000017783.6	Arsa	ENSRNOG0000012953	arylsulfatase A Source RGD Symbol Acc 1310381
A05	SBR1115052	ENSRNOT00000000170.5	Atg12	ENSRNOG0000000157	autophagy related 12 Source RGD Symbol Acc 1306306
A06	SBR1198917	ENSRNOT00000080482.1	Atg16l1	ENSRNOG0000017913	autophagy related 16-like 1 Source RGD Symbol Acc 1310631
A07	SBR1121514	ENSRNOT00000026286.5	Atg16l2	ENSRNOG0000019413	autophagy related 16-like 2 Source RGD Symbol Acc 1311400
A08	SBR1199058	ENSRNOT00000002906.6	Atg3	ENSRNOG0000002094	autophagy related 3 Source RGD Symbol Acc 708464
A09	SBR1173649	ENSRNOT00000025529.7	Atg4b	ENSRNOG0000018403	autophagy related 4B, cysteine peptidase Source RGD Symbol Acc 1309664
A10	SBR1187842	ENSRNOT00000011631.6	Atg4c	ENSRNOG0000008767	autophagy related 4C, cysteine peptidase Source RGD Symbol Acc 1598323
A11	SBR1106755	ENSRNOT00000057078.4	Atg5	ENSRNOG0000000322	autophagy related 5 Source RGD Symbol Acc 1359580
A12	SBR1149690	ENSRNOT00000067532.2	Atg7	ENSRNOG0000007486	autophagy related 7 Source RGD Symbol Acc 1304817
B01	SBR1102412	ENSRNOT00000025740.5	Atg9a	ENSRNOG0000018975	autophagy related 9A Source RGD Symbol Acc 1310450
B02	SBR1106737	ENSRNOT00000028712.5	Bad	ENSRNOG0000021147	BCL2-associated agonist of cell death Source RGD Symbol Acc 620103
B03	SBR1162844	ENSRNOT00000000576.5	Bak1	ENSRNOG0000000485	BCL2-antagonist/killer 1 Source RGD Symbol Acc 621635
B04	SBR1154566	ENSRNOT00000028328.5	Bax	ENSRNOG0000020876	BCL2 associated X, apoptosis regulator Source RGD Symbol Acc 2192
B05	SBR1170984	ENSRNOT00000003768.2	Bcl2	ENSRNOG0000002791	BCL2, apoptosis regulator Source RGD Symbol Acc 2199
B06	SBR1205791	ENSRNOT00000010762.7	Bcl2l1	ENSRNOG0000007946	Bcl2-like 1 Source RGD Symbol Acc 2200
B07	SBR1101983	ENSRNOT00000075886.1	Becn1	ENSRNOG0000020513	beclin 1 Source RGD Symbol Acc 620190
B08	SBR1147619	ENSRNOT00000016776.2	Bid	ENSRNOG0000012439	BH3 interacting domain death agonist Source RGD Symbol Acc 620160
B09	SBR1178674	ENSRNOT00000023477.6	Bnip3	ENSRNOG0000017243	BCL2 interacting protein 3 Source RGD Symbol Acc 620800
B10	SBR1123217	ENSRNOT00000014095.5	Casp3	ENSRNOG0000010475	caspase 3 Source RGD Symbol Acc 2275
B11	SBR1182801	ENSRNOT00000016613.4	Casp8	ENSRNOG0000012331	caspase 8 Source RGD Symbol Acc 620945
B12	SBR1196638	ENSRNOT00000016167.7	Npc1	ENSRNOG0000012016	NPC intracellular cholesterol transporter 1 Source RGD Symbol Acc 628693
C01	SBR1124365	ENSRNOT00000049848.1	Cdkn1b	ENSRNOG0000007249	cyclin-dependent kinase inhibitor 1B Source RGD Symbol Acc 69062
C02	SBR1138605	ENSRNOT00000084293.1	Cdkn2a	ENSRNOG0000059837	cyclin-dependent kinase inhibitor 2A Source RGD Symbol Acc 2323
C03	SBR1141062	ENSRNOT00000025898.4	Cln3	ENSRNOG0000019103	CLN3, battenin Source RGD Symbol Acc 1359537
C04	SBR1215406	ENSRNOT00000014177.5	Ctsb	ENSRNOG0000010331	cathepsin B Source RGD Symbol Acc 621509
C05	SBR1121073	ENSRNOT00000027407.4	Ctsd	ENSRNOG0000020206	cathepsin D Source RGD Symbol Acc 621511
C06	SBR1107619	ENSRNOT00000028732.7	Ctss	ENSRNOG0000021157	cathepsin S Source RGD Symbol Acc 621513
C07	SBR1129817	ENSRNOT00000005143.6	Cxcr4	ENSRNOG0000003866	C-X-C motif chemokine receptor 4 Source RGD Symbol Acc 620465
C08	SBR1155991	ENSRNOT00000080750.1	Dapk1	ENSRNOG0000018198	death associated protein kinase 1 Source RGD Symbol Acc 1311629
C09	SBR1207789	ENSRNOT00000023903.7	Dram2	ENSRNOG0000017744	DNA-damage regulated autophagy modulator 2 Source RGD Symbol Acc 1564099
C10	SBR1191631	ENSRNOT00000008451.5	Eif2ak3	ENSRNOG0000006069	eukaryotic translation initiation factor 2 alpha kinase 3 Source RGD Symbol Acc 70884
		ENSRNOT000000		ENSRNOG00	eukaryotic translation initiation factor 4 gamma, 1 Source RGD Symbol Acc

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1115556	041777.6	Eif4g1	000001738	1306144
C12	SBR1147622	ENSRNOT00000081017.1	Esr1	ENSRNOG0000019358	estrogen receptor 1 Source RGD Symbol Acc 2581
D01	SBR1202965	ENSRNOT00000075089.3	Fadd	ENSRNOG0000047035	Fas associated via death domain Source RGD Symbol Acc 628700
D02	SBR1159525	ENSRNOT00000025928.5	Fas	ENSRNOG0000019142	Fas cell surface death receptor Source RGD Symbol Acc 619831
D03	SBR1212620	ENSRNOT00000075796.2	Gaa	ENSRNOG0000047656	glucosidase, alpha, acid Source RGD Symbol Acc 735227
D04	SBR1130787	ENSRNOT00000023724.6	Gabarap	ENSRNOG0000017417	GABA type A receptor-associated protein Source RGD Symbol Acc 61911
D05	SBR1156616	ENSRNOT00000048998.3	Gabarap2	ENSRNOG0000019425	GABA type A receptor associated protein like 2 Source RGD Symbol Acc 620510
D06	SBR1151584	ENSRNOT00000012854.6	Hdac1	ENSRNOG0000009568	histone deacetylase 1 Source RGD Symbol Acc 1309799
D07	SBR1188831	ENSRNOT00000009295.6	Hdac6	ENSRNOG0000048738	histone deacetylase 6 Source RGD Symbol Acc 619981
D08	SBR1188703	ENSRNOT00000054966.4	Hgs	ENSRNOG0000036696	hepatocyte growth factor-regulated tyrosine kinase substrate Source RGD Symbol Acc 69225
D09	SBR1113341	ENSRNOT00000086310.1	Hsp90aa1	ENSRNOG0000059714	heat shock protein 90 alpha family class A member 1 Source RGD Symbol Acc 631409
D10	SBR1118218	ENSRNOT00000058166.3	Htt	ENSRNOG0000011073	huntingtin Source RGD Symbol Acc 68337
D11	SBR1108917	ENSRNOT00000009919.2	Iifng	ENSRNOG0000007468	interferon gamma Source RGD Symbol Acc 2866
D12	SBR1185495	ENSRNOT00000038780.6	Igf1	ENSRNOG0000004517	insulin-like growth factor 1 Source RGD Symbol Acc 2868
E01	SBR1158339	ENSRNOT00000027656.3	Ins2	ENSRNOG0000020405	insulin 2 Source RGD Symbol Acc 2916
E02	SBR1173162	ENSRNOT00000045545.3	Irgm	ENSRNOG0000031138	immunity-related GTPase M Source RGD Symbol Acc 1305163
E03	SBR1125877	ENSRNOT00000026580.6	Lamp1	ENSRNOG0000019629	lysosomal-associated membrane protein 1 Source RGD Symbol Acc 2989
E04	SBR1099345	ENSRNOT00000035060.4	Map1lc3a	ENSRNOG0000025443	microtubule-associated protein 1 light chain 3 alpha Source RGD Symbol Acc 735183
E05	SBR1192841	ENSRNOT00000067141.2	Map1lc3b	ENSRNOG0000017905	microtubule-associated protein 1 light chain 3 beta Source RGD Symbol Acc 621315
E06	SBR1149566	ENSRNOT00000000618.6	Mapk14	ENSRNOG0000000513	mitogen activated protein kinase 14 Source RGD Symbol Acc 70496
E07	SBR1144517	ENSRNOT00000065216.3	Mapk8	ENSRNOG0000020155	mitogen-activated protein kinase 8 Source RGD Symbol Acc 621506
E08	SBR1202634	ENSRNOT00000042984.5	Mapt	ENSRNOG0000005133	microtubule-associated protein tau Source RGD Symbol Acc 69329
E09	SBR1220576	ENSRNOT00000014167.7	Mtor	ENSRNOG0000009615	mechanistic target of rapamycin kinase Source RGD Symbol Acc 68371
E10	SBR1111134	ENSRNOT00000036838.4	Nfkb1	ENSRNOG0000023258	nuclear factor kappa B subunit 1 Source RGD Symbol Acc 70498
E11	SBR1204540	ENSRNOT00000086127.1	AABR07001519.1	ENSRNOG0000055547	
E12	SBR1103935	ENSRNOT00000087402.1	Park7	ENSRNOG0000018289	Parkinsonism associated deglycase Source RGD Symbol Acc 621808
F01	SBR1160587	ENSRNOT00000066816.2	Pik3c3	ENSRNOG0000017840	phosphatidylinositol 3-kinase, catalytic subunit type 3 Source RGD Symbol Acc 620899
F02	SBR1140914	ENSRNOT00000012487.5	Pik3cg	ENSRNOG0000009385	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit gamma Source RGD Symbol Acc 1306468
F03	SBR1153901	ENSRNOT00000090707.1	Pik3r4	ENSRNOG0000013669	phosphoinositide-3-kinase, regulatory subunit 4 Source RGD Symbol Acc 1311809
F04	SBR1196183	ENSRNOT00000011207.7	Pim2	ENSRNOG0000008177	Pim-2 proto-oncogene, serine/threonine kinase Source RGD Symbol Acc 1560759
F05	SBR1213570	ENSRNOT00000083474.1	Pink1	ENSRNOG0000015385	PTEN induced putative kinase 1 Source RGD Symbol Acc 1305769
F06	SBR1120460	ENSRNOT00000017626.5	Prkaa1	ENSRNOG0000012799	protein kinase AMP-activated catalytic subunit alpha 1 Source RGD Symbol Acc 3387
F07	SBR1180916	ENSRNOT00000012495.7	Psen1	ENSRNOG0000009110	presenilin 1 Source RGD Symbol Acc 3425
F08	SBR1174124	ENSRNOT00000028143.3	Pten	ENSRNOG0000020723	phosphatase and tensin homolog Source RGD Symbol Acc 61995
F09	SBR1192074	ENSRNOT00000076436.1	Mxd3	ENSRNOG0000016539	Max dimerization protein 3 Source RGD Symbol Acc 628624
F10	SBR1123205	ENSRNOT00000021752.5	Rb1	ENSRNOG0000016029	RB transcriptional corepressor 1 Source RGD Symbol Acc 3540

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1162178	ENSRNOT00000061884.2	Rb1cc1	ENSRNOG0000006833	RB1-inducible coiled-coil 1 Source RGD Symbol Acc 1309346
F12	SBR1153488	ENSRNOT00000087415.1	Atg101	ENSRNOG0000007756	autophagy related 101 Source RGD Symbol Acc 1359310
G01	SBR1185629	ENSRNOT00000022451.4	Rgs19	ENSRNOG0000016547	regulator of G-protein signaling 19 Source RGD Symbol Acc 629471
G02	SBR1105085	ENSRNOT00000005226.4	Rps6kb1	ENSRNOG0000003919	ribosomal protein S6 kinase B1 Source RGD Symbol Acc 620683
G03	SBR1121544	ENSRNOT00000039247.4	Snca	ENSRNOG0000008656	synuclein alpha Source RGD Symbol Acc 3729
G04	SBR1193100	ENSRNOT00000059255.5	Sqstm1	ENSRNOG0000003147	sequestosome 1 Source RGD Symbol Acc 69287
G05	SBR1143485	ENSRNOT00000028051.4	Tgfb1	ENSRNOG0000020652	transforming growth factor, beta 1 Source RGD Symbol Acc 69051
G06	SBR1185233	ENSRNOT00000018328.5	Tgm2	ENSRNOG0000012956	transglutaminase 2 Source RGD Symbol Acc 621081
G07	SBR1185020	ENSRNOT00000026734.6	Tm9sf1	ENSRNOG0000019710	transmembrane 9 superfamily member 1 Source RGD Symbol Acc 1307085
G08	SBR1187845	ENSRNOT00000079677.1	LOC103694380	ENSRNOG0000055156	tumor necrosis factor-like Source RGD Symbol Acc 9404643
G09	SBR1107258	ENSRNOT00000017758.5	Tnfsf10	ENSRNOG0000013269	TNF superfamily member 10 Source RGD Symbol Acc 628734
G10	SBR1172374	ENSRNOT00000046490.3	Tp53	ENSRNOG0000010756	tumor protein p53 Source RGD Symbol Acc 3889
G11	SBR1188200	ENSRNOT00000056790.3	Ulk1	ENSRNOG0000037505	unc-51 like autophagy activating kinase 1 Source RGD Symbol Acc 1589743
G12	SBR1187883	ENSRNOT00000005172.7	Wipi1	ENSRNOG0000003827	WD repeat domain, phosphoinositide interacting 1 Source RGD Symbol Acc 1307754
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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