

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

## Rat Hypoxia Signaling Pathway

Cat. no. 249950 SBRN-032ZR

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>	Adm	Adora2b	Aldoa	Angptl4	Ankrd37	Anxa2	Apex1	Arnt	Bhlhe40	Blm	Bnip3	Bnip3l
<b>B</b>	Blg1	Car9	Ccng2	Cdkn2a	Cops5	Ctsc	Ddit4	Dnajc5	Edn1	Egln1	Egln2	Egr1
<b>C</b>	Eif4ebp1	Eno1	Epo	Ero1a	F10	F3	Fos	Gpi	Gys1	Hif1a	Hif1an	Hif3a
<b>D</b>	Hk2	Hmox1	Hnf4a	Ier3	Igf1bp3	Jmjd6	Aldoc	Lgals3	Atr	Lox	Map3k1	Met
<b>E</b>	LOC1036948 77	Mmp9	Mxi1	Nampt	Ndrg1	Nfkb1	Nos3	Odc1	P4ha1	P4hb	Pdk1	Per1
<b>F</b>	Pikfb3	LOC1009117 25	Pikl	Pikp	Pgam1	Pgf	Pgk1	Pgm2	Pim1	Pkm	Plau	Rbpjl
<b>G</b>	Ruvbl2	Serpine1	Slc16a3	Slc2a1	LOC1009095 95	Tfrc	Tp53	Tpi1	Txnip	Usf2	Vdac1	Vegfa
<b>H</b>	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	SBR1135593	ENSRNOT00000036718.1	Adm	ENSRNOG0000027030	adrenomedullin Source RGD Symbol Acc 2047
A02	SBR1209876	ENSRNOT00000003966.3	Adora2b	ENSRNOG0000002922	adenosine A2B receptor Source RGD Symbol Acc 2050
A03	SBR1158667	ENSRNOT00000088473.1	Aldoa	ENSRNOG0000052802	aldolase, fructose-bisphosphate A Source RGD Symbol Acc 2089
A04	SBR1186322	ENSRNOT00000010031.6	Angptl4	ENSRNOG0000007545	angiopoietin-like 4 Source RGD Symbol Acc 735058
A05	SBR1129124	ENSRNOT00000039909.4	Ankrd37	ENSRNOG0000031335	ankyrin repeat domain 37 Source RGD Symbol Acc 1565715
A06	SBR1121016	ENSRNOT00000038677.5	Anxa2	ENSRNOG0000010362	annexin A2 Source RGD Symbol Acc 621170
A07	SBR1185931	ENSRNOT00000087958.1	Apex1	ENSRNOG0000009663	apurinic/aprimidinic endodeoxyribonuclease 1 Source RGD Symbol Acc 2126
A08	SBR1145957	ENSRNOT00000091681.1	Arnt	ENSRNOG0000031174	aryl hydrocarbon receptor nuclear translocator Source RGD Symbol Acc 2153
A09	SBR1176037	ENSRNOT00000009563.2	Bhlhe40	ENSRNOG0000007152	basic helix-loop-helix family, member e40 Source RGD Symbol Acc 68439
A10	SBR1208346	ENSRNOT00000015065.7	Blm	ENSRNOG0000011213	BLM RecQ like helicase Source RGD Symbol Acc 1308810
A11	SBR1178674	ENSRNOT00000023477.6	Bnip3	ENSRNOG0000017243	BCL2 interacting protein 3 Source RGD Symbol Acc 620800
A12	SBR1172499	ENSRNOT00000014798.5	Bnip3l	ENSRNOG0000009820	BCL2 interacting protein 3 like Source RGD Symbol Acc 621354
B01	SBR1117868	ENSRNOT00000005910.4	Btg1	ENSRNOG0000004284	BTG anti-proliferation factor 1 Source RGD Symbol Acc 2224
B02	SBR1133743	ENSRNOT00000023060.5	Car9	ENSRNOG0000017073	carbonic anhydrase 9 Source RGD Symbol Acc 1306426
B03	SBR1133528	ENSRNOT00000002876.5	Ccng2	ENSRNOG0000002089	cyclin G2 Source RGD Symbol Acc 1305002
B04	SBR1138605	ENSRNOT00000084293.1	Cdkn2a	ENSRNOG0000059837	cyclin-dependent kinase inhibitor 2A Source RGD Symbol Acc 2323
B05	SBR1124611	ENSRNOT00000008877.6	Cops5	ENSRNOG0000006499	COP9 signalosome subunit 5 Source RGD Symbol Acc 1310301
B06	SBR1129241	ENSRNOT00000066028.1	Ctsa	ENSRNOG0000015857	cathepsin A Source RGD Symbol Acc 1309070
B07	SBR1144588	ENSRNOT00000085026.1	Ddit4	ENSRNOG0000057078	DNA-damage-inducible transcript 4 Source RGD Symbol Acc 621731
B08	SBR1174689	ENSRNOT00000020581.3	Dnajc5	ENSRNOG0000015202	DnaJ heat shock protein family (Hsp40) member C5 Source RGD Symbol Acc 620516
B09	SBR1168689	ENSRNOT00000019361.2	Edn1	ENSRNOG0000014361	endothelin 1 Source RGD Symbol Acc 2532
B10	SBR1191212	ENSRNOT00000026767.7	Egln1	ENSRNOG0000019773	egl-9 family hypoxia-inducible factor 1 Source RGD Symbol Acc 631375
B11	SBR1179748	ENSRNOT00000028434.6	Egln2	ENSRNOG0000020947	egl-9 family hypoxia-inducible factor 2 Source RGD Symbol Acc 631376
B12	SBR1216566	ENSRNOT00000026303.4	Egr1	ENSRNOG0000019422	early growth response 1 Source RGD Symbol Acc 2544
C01	SBR1186274	ENSRNOT00000016885.5	Eif4ebp1	ENSRNOG0000012582	eukaryotic translation initiation factor 4E binding protein 1 Source RGD Symbol Acc 620259
C02	SBR1196684	ENSRNOT00000081579.1	Eno1	ENSRNOG0000017895	enolase 1 Source RGD Symbol Acc 2553
C03	SBR1147729	ENSRNOT00000001914.4	Epo	ENSRNOG0000001412	erythropoietin Source RGD Symbol Acc 2559
C04	SBR1157441	ENSRNOT00000009404.6	Ero1a	ENSRNOG0000006462	endoplasmic reticulum oxidoreductase 1 alpha Source RGD Symbol Acc 621713
C05	SBR1112249	ENSRNOT00000026677.6	F10	ENSRNOG0000033444	coagulation factor X Source RGD Symbol Acc 61850
C06	SBR1148832	ENSRNOT00000015836.5	F3	ENSRNOG0000011800	coagulation factor III, tissue factor Source RGD Symbol Acc 2587
C07	SBR1110295	ENSRNOT00000010712.3	Fos	ENSRNOG0000008015	Fos proto-oncogene, AP-1 transcription factor subunit Source RGD Symbol Acc 2626
C08	SBR1214960	ENSRNOT00000032613.4	Gpi	ENSRNOG0000023150	glucose-6-phosphate isomerase Source RGD Symbol Acc 2727
C09	SBR1135273	ENSRNOT00000028271.3	Gys1	ENSRNOG0000020812	glycogen synthase 1 Source RGD Symbol Acc 1589798
C10	SBR1184753	ENSRNOT00000077935.1	Hif1a	ENSRNOG0000008292	hypoxia inducible factor 1 subunit alpha Source RGD Symbol Acc 61928
		ENSRNOT000000		ENSRNOG00	hypoxia inducible factor 1 subunit alpha inhibitor Source RGD Symbol Acc

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1155220	019070.5	Hif1an	000014234	1308281
C12	SBR1216420	ENSRNOT00000 023490.3	Hif3a	ENSRNOG00 000017198	hypoxia inducible factor 3 subunit alpha Source RGD Symbol Acc 70332
D01	SBR1148823	ENSRNOT00000 008813.3	Hk2	ENSRNOG00 000006116	hexokinase 2 Source RGD Symbol Acc 2797
D02	SBR1146734	ENSRNOT00000 019192.6	Hmox1	ENSRNOG00 000014117	heme oxygenase 1 Source RGD Symbol Acc 2806
D03	SBR1193762	ENSRNOT00000 089893.1	Hnf4a	ENSRNOG00 000008895	hepatocyte nuclear factor 4, alpha Source RGD Symbol Acc 2810
D04	SBR1116932	ENSRNOT00000 001099.6	Ier3	ENSRNOG00 000000827	immediate early response 3 Source RGD Symbol Acc 1303321
D05	SBR1152057	ENSRNOT00000 088355.1	Igfbp3	ENSRNOG00 000061910	insulin-like growth factor binding protein 3 Source RGD Symbol Acc 2874
D06	SBR1133537	ENSRNOT00000 064671.2	Jmjd6	ENSRNOG00 000000250	jumonji domain containing 6, arginine demethylase and lysine hydroxylase Source RGD Symbol Acc 1305395
D07	SBR1139438	ENSRNOT00000 046388.5	Aldoc	ENSRNOG00 000011452	aldolase, fructose-bisphosphate C Source RGD Symbol Acc 2091
D08	SBR1182150	ENSRNOT00000 014216.5	Lgals3	ENSRNOG00 000010645	galectin 3 Source RGD Symbol Acc 69356
D09	SBR1199416	ENSRNOT00000 049967.5	Atr	ENSRNOG00 000010027	ATR serine/threonine kinase Source RGD Symbol Acc 1305796
D10	SBR1129018	ENSRNOT00000 019844.6	Lox	ENSRNOG00 000014426	lysyl oxidase Source RGD Symbol Acc 3015
D11	SBR1134748	ENSRNOT00000 017968.3	Map3k1	ENSRNOG00 000013177	mitogen-activated protein kinase kinase kinase 1 Source RGD Symbol Acc 620966
D12	SBR1107950	ENSRNOT00000 086902.1	Met	ENSRNOG00 000052745	MET proto-oncogene, receptor tyrosine kinase Source RGD Symbol Acc 3082
E01	SBR1136891	ENSRNOT00000 008608.4	LOC10369 4877	ENSRNOG00 000006589	macrophage migration inhibitory factor Source RGD Symbol Acc 621163
E02	SBR1206750	ENSRNOT00000 023965.3	Mmp9	ENSRNOG00 000017539	matrix metalloproteinase 9 Source RGD Symbol Acc 621320
E03	SBR1183056	ENSRNOT00000 076387.2	Mxi1	ENSRNOG00 000034078	MAX interactor 1, dimerization protein Source RGD Symbol Acc 3128
E04	SBR1212040	ENSRNOT00000 013043.6	Nampt	ENSRNOG00 000009754	nicotinamide phosphoribosyltransferase Source RGD Symbol Acc 631365
E05	SBR1150062	ENSRNOT00000 093459.1	Ndrp1	ENSRNOG00 000007393	N-myc downstream regulated 1 Source RGD Symbol Acc 1307303
E06	SBR1111134	ENSRNOT00000 036838.4	Nfkb1	ENSRNOG00 000023258	nuclear factor kappa B subunit 1 Source RGD Symbol Acc 70498
E07	SBR1203756	ENSRNOT00000 013058.4	Nos3	ENSRNOG00 000009348	nitric oxide synthase 3 Source RGD Symbol Acc 3186
E08	SBR1207804	ENSRNOT00000 079185.1	Odc1	ENSRNOG00 000005424	ornithine decarboxylase 1 Source RGD Symbol Acc 3227
E09	SBR1203969	ENSRNOT00000 070897.1	P4ha1	ENSRNOG00 000050655	prolyl 4-hydroxylase subunit alpha 1 Source RGD Symbol Acc 621000
E10	SBR1164077	ENSRNOT00000 054958.2	P4hb	ENSRNOG00 000036689	prolyl 4-hydroxylase subunit beta Source RGD Symbol Acc 3244
E11	SBR1201435	ENSRNOT00000 002072.6	Pdk1	ENSRNOG00 000001517	pyruvate dehydrogenase kinase 1 Source RGD Symbol Acc 69427
E12	SBR1195211	ENSRNOT00000 057136.3	Per1	ENSRNOG00 000007387	period circadian regulator 1 Source RGD Symbol Acc 727863
F01	SBR1213757	ENSRNOT00000 051067.4	Pfkfb3	ENSRNOG00 000018911	6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 3 Source RGD Symbol Acc 619776
F02	SBR1152891	ENSRNOT00000 091573.1	LOC10091 1725	ENSRNOG00 000020656	6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 4-like Source RGD Symbol Acc 6491338
F03	SBR1127317	ENSRNOT00000 001625.5	Pfkl	ENSRNOG00 000001214	phosphofructokinase, liver type Source RGD Symbol Acc 3311
F04	SBR1195477	ENSRNOT00000 023252.7	Pfkp	ENSRNOG00 000017163	phosphofructokinase, platelet Source RGD Symbol Acc 61893
F05	SBR1133426	ENSRNOT00000 071965.2	Pgam1	ENSRNOG00 000050585	phosphoglycerate mutase 1 Source RGD Symbol Acc 3312
F06	SBR1124947	ENSRNOT00000 007790.5	Pgf	ENSRNOG00 000005650	placental growth factor Source RGD Symbol Acc 619850
F07	SBR1149927	ENSRNOT00000 077604.1	Pgk1	ENSRNOG00 000058249	phosphoglycerate kinase 1 Source RGD Symbol Acc 619878
F08	SBR1106837	ENSRNOT00000 002977.5	Pgm2	ENSRNOG00 000002185	phosphoglucosylmutase 2 Source RGD Symbol Acc 1306061
F09	SBR1098014	ENSRNOT00000 000637.5	Pim1	ENSRNOG00 000000529	Pim-1 proto-oncogene, serine/threonine kinase Source RGD Symbol Acc 3330
F10	SBR1193295	ENSRNOT00000 015332.7	Pkm	ENSRNOG00 000011329	pyruvate kinase M1/2 Source RGD Symbol Acc 3337

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1186883	ENSRNOT00000014273.5	Plau	ENSRNOG0000010516	plasminogen activator, urokinase Source RGD Symbol Acc 3343
F12	SBR1108732	ENSRNOT00000019127.5	Rbpjl	ENSRNOG0000026295	recombination signal binding protein for immunoglobulin kappa J region-like Source RGD Symbol Acc 1304786
G01	SBR1138357	ENSRNOT00000028217.6	Ruvbl2	ENSRNOG0000020793	RuvB-like AAA ATPase 2 Source RGD Symbol Acc 1306509
G02	SBR1126485	ENSRNOT00000001916.2	Serpine1	ENSRNOG0000001414	serpin family E member 1 Source RGD Symbol Acc 3249
G03	SBR1176498	ENSRNOT00000054939.3	Slc16a3	ENSRNOG0000036677	solute carrier family 16 member 3 Source RGD Symbol Acc 620603
G04	SBR1109042	ENSRNOT00000064452.2	Slc2a1	ENSRNOG0000007284	solute carrier family 2 member 1 Source RGD Symbol Acc 3704
G05	SBR1211125	ENSRNOT00000088270.1	LOC100909595	ENSRNOG0000008376	solute carrier family 2 member 3 Source RGD Symbol Acc 3706
G06	SBR1178728	ENSRNOT00000002407.5	Tfrc	ENSRNOG0000001766	transferrin receptor Source RGD Symbol Acc 70488
G07	SBR1172374	ENSRNOT00000046490.3	Tp53	ENSRNOG0000010756	tumor protein p53 Source RGD Symbol Acc 3889
G08	SBR1211463	ENSRNOT00000020647.6	Tpi1	ENSRNOG0000015290	triosephosphate isomerase 1 Source RGD Symbol Acc 3896
G09	SBR1211460	ENSRNOT00000028793.6	Txnip	ENSRNOG0000021201	thioredoxin interacting protein Source RGD Symbol Acc 620886
G10	SBR1120529	ENSRNOT00000087381.1	Usf2	ENSRNOG0000053725	upstream transcription factor 2, c-fos interacting Source RGD Symbol Acc 620975
G11	SBR1193148	ENSRNOT00000008477.5	Vdac1	ENSRNOG0000006375	voltage-dependent anion channel 1 Source RGD Symbol Acc 621575
G12	SBR1108862	ENSRNOT00000044163.4	Vegfa	ENSRNOG0000019598	vascular endothelial growth factor A Source RGD Symbol Acc 619991
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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