

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

## Rat Telomeres & Telomerase

Cat. no. 249950 SBRN-010ZA

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 (96-well): QuantiNova LNA PCR Focus Panel

For the 384-well (4 × 96) PCR panels, genes are present in a staggered format. 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>	LOC1009097 50	Acd	Akt1	Atm	Taf3	Bcl2	Blm	Cdk2	Stt3a	Chek2	Dclre1b	Dclre1c
<b>B</b>	Dkc1	Egf	Eme1	Ercc1	AABR0702900 2.2	Esf1	Hat1	Heatr1	Hnrnpa2b1	Hnrnpd	Hsp90aa1	Hspa11
<b>C</b>	Igf1	Impdh2	Kras	Krit1	Mapre1	Men1	Mre11a	Msh2	Msh3	Mus81	Myc	Nbn
<b>D</b>	Nhp2	Nop56	Stn1	Parp1	Pax8	Pirx1	Pik1	Pparg	Ppp2r1a	Ppp2r1b	Ppp2r2b	Prkca
<b>E</b>	Prkcb	Prkdc	Ptges3l1	Pura	Rad17	Rad50	Rap1a	Rapgef1	Rasa1	Rassf1	Rb1	Rfc1
<b>F</b>	Sart1	Sirt2	Sirt6	Smad3	Smg6	Snrpn	Sp1	Ssb	Tep1	Terf1	Terf2	Terf2ip
<b>G</b>	Ter1	Tgfb1	Tinf2	Tnks	Pot1	Tp53	Tp53bp1	Tpp1	Sun1	Wrap53	Xrcc5	Xrcc6
<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	SBR1140753	ENSRNOT00000042495.5	LOC100909750	ENSRNOG0000047356	tyrosine-protein kinase ABL1-like Source RGD Symbol Acc 6502032
A02	SBR1109753	ENSRNOT00000059577.2	Acd	ENSRNOG0000038973	ACD, shelterin complex subunit and telomerase recruitment factor Source RGD Symbol Acc 1565053
A03	SBR1163078	ENSRNOT00000031164.3	Akt1	ENSRNOG0000028629	AKT serine/threonine kinase 1 Source RGD Symbol Acc 2081
A04	SBR1113073	ENSRNOT00000050555.3	Atm	ENSRNOG0000029773	ATM serine/threonine kinase Source RGD Symbol Acc 1593265
A05	SBR1162009	ENSRNOT00000064802.3	Taf3	ENSRNOG0000019223	ATP synthase F1 subunit gamma Source RGD Symbol Acc 620011
A06	SBR1170984	ENSRNOT00000003768.2	Bcl2	ENSRNOG0000002791	BCL2, apoptosis regulator Source RGD Symbol Acc 2199
A07	SBR1208346	ENSRNOT00000015065.7	Blm	ENSRNOG0000011213	BLM RecQ like helicase Source RGD Symbol Acc 1308810
A08	SBR1144473	ENSRNOT00000031963.3	Cdk2	ENSRNOG0000006469	cyclin dependent kinase 2 Source RGD Symbol Acc 70486
A09	SBR1115970	ENSRNOT00000043518.4	Stt3a	ENSRNOG00000031896	STT3A, catalytic subunit of the oligosaccharyltransferase complex Source RGD Symbol Acc 1565793
A10	SBR1132181	ENSRNOT00000085591.1	Chek2	ENSRNOG0000037509	checkpoint kinase 2 Source RGD Symbol Acc 621543
A11	SBR1173760	ENSRNOT00000026213.6	Dclre1b	ENSRNOG0000019367	DNA cross-link repair 1B Source RGD Symbol Acc 1310343
A12	SBR1209414	ENSRNOT00000021506.4	Dclre1c	ENSRNOG0000015980	DNA cross-link repair 1C Source RGD Symbol Acc 708574
B01	SBR1199468	ENSRNOT00000089847.1	Dkc1	ENSRNOG0000055562	dyskerin pseudouridine synthase 1 Source RGD Symbol Acc 621780
B02	SBR1200927	ENSRNOT00000087007.1	Egf	ENSRNOG00000053979	epidermal growth factor Source RGD Symbol Acc 2542
B03	SBR1108103	ENSRNOT00000032693.3	Eme1	ENSRNOG0000024420	essential meiotic structure-specific endonuclease 1 Source RGD Symbol Acc 1309067
B04	SBR1128428	ENSRNOT00000024113.5	Ercc1	ENSRNOG0000017839	ERCC excision repair 1, endonuclease non-catalytic subunit Source RGD Symbol Acc 1306992
B05	SBR1208915	ENSRNOT00000004563.6	AABR07029002.2	ENSRNOG0000048121	ERCC excision repair 4, endonuclease catalytic subunit Source NCBI gene Acc 304719
B06	SBR1210348	ENSRNOT00000034487.5	Esf1	ENSRNOG0000004777	ESF1 nucleolar pre-rRNA processing protein homolog Source RGD Symbol Acc 1306067
B07	SBR1198969	ENSRNOT00000002085.6	Hat1	ENSRNOG0000001524	histone acetyltransferase 1 Source RGD Symbol Acc 1305716
B08	SBR1214817	ENSRNOT00000071829.2	Heatr1	ENSRNOG0000047594	HEAT repeat-containing protein 1 Source RGD Symbol Acc 11474378
B09	SBR1184201	ENSRNOT00000015152.6	Hnrnpa2b1	ENSRNOG0000011175	heterogeneous nuclear ribonucleoprotein A2/B1 Source RGD Symbol Acc 1310403
B10	SBR1190588	ENSRNOT00000003158.6	Hnrnpd	ENSRNOG0000002292	heterogeneous nuclear ribonucleoprotein D Source RGD Symbol Acc 620365
B11	SBR1113341	ENSRNOT00000086310.1	Hsp90aa1	ENSRNOG0000059714	heat shock protein 90 alpha family class A member 1 Source RGD Symbol Acc 631409
B12	SBR1207127	ENSRNOT00000074223.2	Hspa11	ENSRNOG0000047966	heat shock protein family A (Hsp70) member 1 like Source RGD Symbol Acc 1595925
C01	SBR1185495	ENSRNOT00000038780.6	Igf1	ENSRNOG0000004517	insulin-like growth factor 1 Source RGD Symbol Acc 2868
C02	SBR1152759	ENSRNOT00000047717.4	Impdh2	ENSRNOG0000031965	inosine monophosphate dehydrogenase 2 Source RGD Symbol Acc 735092
C03	SBR1196578	ENSRNOT00000012588.4	Kras	ENSRNOG0000009338	KRAS proto-oncogene, GTPase Source RGD Symbol Acc 2981
C04	SBR1139048	ENSRNOT00000032505.4	Krit1	ENSRNOG0000007937	KRIT1, ankyrin repeat containing Source RGD Symbol Acc 1305929
C05	SBR1172341	ENSRNOT00000016220.6	Mapre1	ENSRNOG0000011798	microtubule-associated protein, RP/EB family, member 1 Source RGD Symbol Acc 621781
C06	SBR1171185	ENSRNOT00000028592.6	Men1	ENSRNOG0000021054	menin 1 Source RGD Symbol Acc 3078
C07	SBR1133175	ENSRNOT00000012940.4	Mre11a	ENSRNOG0000009506	MRE11 homolog A, double strand break repair nuclease Source RGD Symbol Acc 69263
C08	SBR1147710	ENSRNOT00000021538.7	Msh2	ENSRNOG0000015796	mutS homolog 2 Source RGD Symbol Acc 620786
C09	SBR1193318	ENSRNOT00000018449.7	Msh3	ENSRNOG0000013673	mutS homolog 3 Source RGD Symbol Acc 1563954
C10	SBR1141838	ENSRNOT00000028015.6	Mus81	ENSRNOG0000020617	MUS81 structure-specific endonuclease subunit Source RGD Symbol Acc 1311957
		ENSRNOT000000		ENSRNOG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1106364	006188.5	Myc	000004500	MYC proto-oncogene, bHLH transcription factor Source RGD Symbol Acc 3130
C12	SBR1194336	ENSRNOT00000012377.4	Nbn	ENSRNOG0000008580	nibrin Source RGD Symbol Acc 621420
D01	SBR1129379	ENSRNOT00000064984.2	Nhp2	ENSRNOG0000004247	NHP2 ribonucleoprotein Source RGD Symbol Acc 1309435
D02	SBR1097021	ENSRNOT00000009564.5	Nop56	ENSRNOG0000007128	NOP56 ribonucleoprotein Source RGD Symbol Acc 1308892
D03	SBR1148499	ENSRNOT00000027614.7	Stn1	ENSRNOG0000020376	STN1, CST complex subunit Source RGD Symbol Acc 1305637
D04	SBR1161994	ENSRNOT00000004232.5	Parp1	ENSRNOG0000003084	poly (ADP-ribose) polymerase 1 Source RGD Symbol Acc 2053
D05	SBR1201879	ENSRNOT00000031058.6	Pax8	ENSRNOG0000026203	paired box 8 Source RGD Symbol Acc 620434
D06	SBR1128321	ENSRNOT00000016027.5	Pinx1	ENSRNOG0000012012	PIN2/TERF1 interacting, telomerase inhibitor 1 Source RGD Symbol Acc 1566025
D07	SBR1103198	ENSRNOT00000025629.7	Plk1	ENSRNOG0000018815	polo-like kinase 1 Source RGD Symbol Acc 3352
D08	SBR1131520	ENSRNOT00000082969.1	Pparg	ENSRNOG0000008839	peroxisome proliferator-activated receptor gamma Source RGD Symbol Acc 3371
D09	SBR1130966	ENSRNOT00000015019.6	Ppp2r1a	ENSRNOG0000011282	protein phosphatase 2 scaffold subunit A alpha Source RGD Symbol Acc 620907
D10	SBR1163483	ENSRNOT00000064290.2	Ppp2r1b	ENSRNOG0000010922	protein phosphatase 2 scaffold subunit A beta Source RGD Symbol Acc 1304764
D11	SBR1117650	ENSRNOT00000041188.4	Ppp2r2b	ENSRNOG0000018851	protein phosphatase 2, regulatory subunit B, beta Source RGD Symbol Acc 631441
D12	SBR1097570	ENSRNOT00000055073.4	Prkca	ENSRNOG0000003491	protein kinase C, alpha Source RGD Symbol Acc 3395
E01	SBR1121471	ENSRNOT00000016418.6	Prkcb	ENSRNOG0000012061	protein kinase C, beta Source RGD Symbol Acc 3396
E02	SBR1128961	ENSRNOT00000035247.7	Prkdc	ENSRNOG0000025028	protein kinase, DNA-activated, catalytic subunit Source RGD Symbol Acc 1308982
E03	SBR1160188	ENSRNOT00000087509.1	Ptges3l1	ENSRNOG0000060486	prostaglandin E synthase 3-like 1 Source RGD Symbol Acc 1359350
E04	SBR1206270	ENSRNOT00000025756.6	Pura	ENSRNOG0000019062	purine rich element binding protein A Source RGD Symbol Acc 1308543
E05	SBR1186209	ENSRNOT00000024801.4	Rad17	ENSRNOG0000018353	RAD17 checkpoint clamp loader component Source RGD Symbol Acc 1309515
E06	SBR1097975	ENSRNOT00000063772.2	Rad50	ENSRNOG0000033065	RAD50 double strand break repair protein Source RGD Symbol Acc 621542
E07	SBR1188580	ENSRNOT00000047836.4	Rap1a	ENSRNOG0000032463	RAP1A, member of RAS oncogene family Source RGD Symbol Acc 1359694
E08	SBR1160614	ENSRNOT00000060977.5	Rapgef1	ENSRNOG0000014316	Rap guanine nucleotide exchange factor 1 Source RGD Symbol Acc 619793
E09	SBR1192086	ENSRNOT00000046251.2	Rasa1	ENSRNOG0000029185	RAS p21 protein activator 1 Source RGD Symbol Acc 3537
E10	SBR1215724	ENSRNOT00000037363.4	Rassf1	ENSRNOG0000021548	Ras association domain family member 1 Source RGD Symbol Acc 1359383
E11	SBR1123205	ENSRNOT00000021752.5	Rb1	ENSRNOG0000016029	RB transcriptional corepressor 1 Source RGD Symbol Acc 3540
E12	SBR1152190	ENSRNOT00000003907.7	Rfc1	ENSRNOG000002855	replication factor C subunit 1 Source RGD Symbol Acc 620619
F01	SBR1137115	ENSRNOT00000027811.3	Sart1	ENSRNOG0000020475	spliceosome associated factor 1, recruiter of U4/U6.U5 tri-snRNP Source RGD Symbol Acc 61930
F02	SBR1153037	ENSRNOT00000064153.1	Sirt2	ENSRNOG0000020102	sirtuin 2 Source RGD Symbol Acc 621481
F03	SBR1200206	ENSRNOT00000008758.5	Sirt6	ENSRNOG0000006393	sirtuin 6 Source RGD Symbol Acc 1305216
F04	SBR1096995	ENSRNOT00000039730.4	Smad3	ENSRNOG0000008620	SMAD family member 3 Source RGD Symbol Acc 3032
F05	SBR1106193	ENSRNOT00000004058.8	Smg6	ENSRNOG0000003041	SMG6 nonsense mediated mRNA decay factor Source RGD Symbol Acc 1595918
F06	SBR1115446	ENSRNOT00000077253.1	Snrpn	ENSRNOG0000059764	small nuclear ribonucleoprotein polypeptide N Source RGD Symbol Acc 621306
F07	SBR1200819	ENSRNOT00000019403.6	Sp1	ENSRNOG0000014084	Sp1 transcription factor Source RGD Symbol Acc 3738
F08	SBR1197344	ENSRNOT00000011174.5	Ssb	ENSRNOG0000007998	Sjogren syndrome antigen B Source RGD Symbol Acc 620804
F09	SBR1168776	ENSRNOT00000088981.1	Tep1	ENSRNOG0000051706	telomerase associated protein 1 Source RGD Symbol Acc 3869
F10	SBR1178041	ENSRNOT00000049741.2	Terf1	ENSRNOG0000007291	telomeric repeat binding factor 1 Source RGD Symbol Acc 1311574

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1115491	ENSRNOT00000027695.6	Terf2	ENSRNOG00000020435	telomeric repeat binding factor 2 Source RGD Symbol Acc 1310881
F12	SBR1124114	ENSRNOT00000014660.6	Terf2ip	ENSRNOG00000010712	TERF2 interacting protein Source RGD Symbol Acc 1309684
G01	SBR1196369	ENSRNOT00000022683.4	Tert	ENSRNOG00000025327	telomerase reverse transcriptase Source RGD Symbol Acc 70494
G02	SBR1143485	ENSRNOT00000028051.4	Tgfb1	ENSRNOG00000020652	transforming growth factor, beta 1 Source RGD Symbol Acc 69051
G03	SBR1125369	ENSRNOT00000027362.5	Tinf2	ENSRNOG00000020189	TERF1 interacting nuclear factor 2 Source RGD Symbol Acc 1359192
G04	SBR1207293	ENSRNOT00000015813.6	Tnks	ENSRNOG00000011625	tankyrase Source RGD Symbol Acc 1308784
G05	SBR1201420	ENSRNOT00000060459.3	Pot1	ENSRNOG00000019986	protection of telomeres 1 Source RGD Symbol Acc 1562696
G06	SBR1172374	ENSRNOT00000046490.3	Tp53	ENSRNOG00000010756	tumor protein p53 Source RGD Symbol Acc 3889
G07	SBR1215660	ENSRNOT00000019025.8	Tp53bp1	ENSRNOG00000013837	tumor protein p53 binding protein 1 Source RGD Symbol Acc 1308039
G08	SBR1102635	ENSRNOT00000026280.4	Tpp1	ENSRNOG00000019212	tripeptidyl peptidase 1 Source RGD Symbol Acc 621296
G09	SBR1211838	ENSRNOT00000089418.1	Sun1	ENSRNOG0000001299	Sad1 and UNC84 domain containing 1 Source RGD Symbol Acc 1359142
G10	SBR1190412	ENSRNOT00000014261.5	Wrap53	ENSRNOG00000010520	WD repeat containing, antisense to TP53 Source RGD Symbol Acc 1359624
G11	SBR1103076	ENSRNOT00000021656.4	Xrcc5	ENSRNOG00000016105	X-ray repair cross complementing 5 Source RGD Symbol Acc 3976
G12	SBR1106897	ENSRNOT00000008819.7	Xrcc6	ENSRNOG0000006392	X-ray repair cross complementing 6 Source RGD Symbol Acc 2643
H01	SBR1220567	ENSRNOT00000042459.4	Actb	ENSRNOG00000034254	actin, beta Source RGD Symbol Acc 628837
H02	SBR1220568	ENSRNOT00000023017.5	B2m	ENSRNOG00000017123	beta-2 microglobulin Source RGD Symbol Acc 2189
H03	SBR1225377	ENSRNOT00000065935.3	Hprt1	ENSRNOG00000048561	hypoxanthine phosphoribosyltransferase 1 Source RGD Symbol Acc 2826
H04	SBR1122313	ENSRNOT00000017468.2	Ldha	ENSRNOG00000013009	lactate dehydrogenase A Source RGD Symbol Acc 2996
H05	SBR1220572	ENSRNOT00000018820.5	Rplp1	ENSRNOG00000013874	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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