

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

## Rat Breast Cancer

Cat. no. 249950 SBRN-131ZA

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
A	Abcb1a	Abcg2	Adam23	Akt1	Apc	Ar	Atm	Bad	Bcl2	Birc5	Brc1	Brc2
B	Ccna1	Ccnd1	Ccnd2	Cene1	Cdh1	Cdh13	Cdk2	Cdkn1a	Cdkn1c	Cdkn2a	Csf1	Cst6
C	Clnb1	Ctsd	Egf	Egfr	Erb2	Esr1	Esr2	Foxa1	Gata3	Gli1	Grb7	Gstp1
D	Hic1	Id1	Igf1	Igf1r	Igf1bp3	Il6	Jun	Krt18	Krt19	Krt5	Krt8	Mapk1
E	Mapk3	Mapk8	Mgmt	Mki67	Mlh1	Mmp2	Mmp9	Muc1	Myc	Nme1	Notch1	AABR0703175 6.1
F	Pgr	Plau	Prdm2	Pten	Ptgs2	Pycard	Rarb	Rassf1	Rb1	Serpine1	Sfn	Sfrp1
G	Slc39a6	Slt2	Snai2	Src	Tff3	Tgfb1	Thbs1	Tp53	Tp73	Twist1	Vegfa	Xbp1
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	SBR1116067	ENSRNOT00000082359.1	Abcb1a	ENSRNOG0000008012	ATP binding cassette subfamily B member 4 Source RGD Symbol Acc 620248
A02	SBR1124096	ENSRNOT00000088983.1	Abcg2	ENSRNOG0000007041	ATP binding cassette subfamily G member 2 Source RGD Symbol Acc 631345
A03	SBR1135219	ENSRNOT00000040525.2	Adam23	ENSRNOG0000012424	ADAM metallopeptidase domain 23 Source RGD Symbol Acc 1305739
A04	SBR1163078	ENSRNOT00000031164.3	Akt1	ENSRNOG0000028629	AKT serine/threonine kinase 1 Source RGD Symbol Acc 2081
A05	SBR1094067	ENSRNOT00000090264.1	Apc	ENSRNOG0000020423	APC, WNT signaling pathway regulator Source RGD Symbol Acc 2123
A06	SBR1193668	ENSRNOT00000009129.7	Ar	ENSRNOG0000005639	androgen receptor Source RGD Symbol Acc 2147
A07	SBR1113073	ENSRNOT00000050555.3	Atm	ENSRNOG0000029773	ATM serine/threonine kinase Source RGD Symbol Acc 1593265
A08	SBR1106737	ENSRNOT00000028712.5	Bad	ENSRNOG0000021147	BCL2-associated agonist of cell death Source RGD Symbol Acc 620103
A09	SBR1170984	ENSRNOT00000003768.2	Bcl2	ENSRNOG0000002791	BCL2, apoptosis regulator Source RGD Symbol Acc 2199
A10	SBR1130503	ENSRNOT00000072387.1	Birc5	ENSRNOG00000050819	baculoviral IAP repeat-containing 5 Source RGD Symbol Acc 70499
A11	SBR1185089	ENSRNOT00000028109.3	Brca1	ENSRNOG0000020701	BRCA1, DNA repair associated Source RGD Symbol Acc 2218
A12	SBR1095330	ENSRNOT00000001475.7	Brca2	ENSRNOG0000001111	BRCA2, DNA repair associated Source RGD Symbol Acc 2219
B01	SBR1129309	ENSRNOT00000040002.4	Ccna1	ENSRNOG0000014052	cyclin A1 Source RGD Symbol Acc 1310639
B02	SBR1211432	ENSRNOT00000028411.3	Ccnd1	ENSRNOG0000020918	cyclin D1 Source RGD Symbol Acc 68384
B03	SBR1095869	ENSRNOT00000086440.1	Ccnd2	ENSRNOG00000057710	cyclin D2 Source RGD Symbol Acc 621083
B04	SBR1171340	ENSRNOT00000020014.4	Ccne1	ENSRNOG0000014786	cyclin E1 Source RGD Symbol Acc 2294
B05	SBR1170192	ENSRNOT00000027346.2	Cdh1	ENSRNOG0000020151	cadherin 1 Source RGD Symbol Acc 69279
B06	SBR1129959	ENSRNOT00000077053.2	Cdh13	ENSRNOG0000014371	cadherin 13 Source RGD Symbol Acc 619745
B07	SBR1144473	ENSRNOT00000031963.3	Cdk2	ENSRNOG0000006469	cyclin dependent kinase 2 Source RGD Symbol Acc 70486
B08	SBR1145142	ENSRNOT00000091731.1	Cdkn1a	ENSRNOG0000000521	cyclin-dependent kinase inhibitor 1A Source RGD Symbol Acc 69328
B09	SBR1184599	ENSRNOT00000078944.1	Cdkn1c	ENSRNOG00000059500	cyclin-dependent kinase inhibitor 1C Source RGD Symbol Acc 727892
B10	SBR1138605	ENSRNOT00000084293.1	Cdkn2a	ENSRNOG00000059837	cyclin-dependent kinase inhibitor 2A Source RGD Symbol Acc 2323
B11	SBR1099651	ENSRNOT00000025222.6	Csf1	ENSRNOG0000018659	colony stimulating factor 1 Source RGD Symbol Acc 621063
B12	SBR1200233	ENSRNOT00000027727.2	Cst6	ENSRNOG0000020455	cystatin E/M Source RGD Symbol Acc 628799
C01	SBR1143136	ENSRNOT00000079085.1	Ctnnb1	ENSRNOG00000054172	catenin beta 1 Source RGD Symbol Acc 70487
C02	SBR1121073	ENSRNOT00000027407.4	Ctsd	ENSRNOG0000020206	cathepsin D Source RGD Symbol Acc 621511
C03	SBR1200927	ENSRNOT00000087007.1	Egf	ENSRNOG00000053979	epidermal growth factor Source RGD Symbol Acc 2542
C04	SBR1196436	ENSRNOT00000006087.2	Egfr	ENSRNOG0000004332	epidermal growth factor receptor Source RGD Symbol Acc 2543
C05	SBR1175639	ENSRNOT00000049070.3	ErbB2	ENSRNOG0000006450	erb-b2 receptor tyrosine kinase 2 Source RGD Symbol Acc 2561
C06	SBR1147622	ENSRNOT00000081017.1	Esr1	ENSRNOG0000019358	estrogen receptor 1 Source RGD Symbol Acc 2581
C07	SBR1176994	ENSRNOT00000042682.4	Esr2	ENSRNOG0000005343	estrogen receptor 2 Source RGD Symbol Acc 2582
C08	SBR1205435	ENSRNOT00000009940.6	Foxa1	ENSRNOG0000009284	forkhead box A1 Source RGD Symbol Acc 2807
C09	SBR1158985	ENSRNOT00000026187.5	Gata3	ENSRNOG0000019336	GATA binding protein 3 Source RGD Symbol Acc 621250
C10	SBR1126418	ENSRNOT00000009803.7	Gli1	ENSRNOG0000025120	GLI family zinc finger 1 Source RGD Symbol Acc 621673
		ENSRNOT000000		ENSRNOG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1116149	009299.6	Grb7	000006990	growth factor receptor bound protein 7 Source RGD Symbol Acc 619759
C12	SBR1125046	ENSRNOT00000 024601.4	Gstp1	ENSRNOG00 000018237	glutathione S-transferase pi 1 Source RGD Symbol Acc 2758
D01	SBR1159065	ENSRNOT00000 004143.4	Hic1	ENSRNOG00 000046405	HIC ZBTB transcriptional repressor 1 Source RGD Symbol Acc 1307527
D02	SBR1135399	ENSRNOT00000 029660.5	Id1	ENSRNOG00 000021750	inhibitor of DNA binding 1, HLH protein Source RGD Symbol Acc 2858
D03	SBR1185495	ENSRNOT00000 038780.6	Igf1	ENSRNOG00 000004517	insulin-like growth factor 1 Source RGD Symbol Acc 2868
D04	SBR1109208	ENSRNOT00000 019267.6	Igf1r	ENSRNOG00 000014187	insulin-like growth factor 1 receptor Source RGD Symbol Acc 2869
D05	SBR1152057	ENSRNOT00000 088355.1	Igfbp3	ENSRNOG00 000061910	insulin-like growth factor binding protein 3 Source RGD Symbol Acc 2874
D06	SBR1156877	ENSRNOT00000 013732.6	Il6	ENSRNOG00 000010278	interleukin 6 Source RGD Symbol Acc 2901
D07	SBR1133226	ENSRNOT00000 011731.3	Jun	ENSRNOG00 000026293	Jun proto-oncogene, AP-1 transcription factor subunit Source RGD Symbol Acc 2943
D08	SBR1165271	ENSRNOT00000 073951.2	Krt18	ENSRNOG00 000047393	keratin 18 Source RGD Symbol Acc 619935
D09	SBR1178187	ENSRNOT00000 019133.4	Krt19	ENSRNOG00 000014233	keratin 19 Source RGD Symbol Acc 619936
D10	SBR1207500	ENSRNOT00000 011644.5	Krt5	ENSRNOG00 000050420	keratin 5 Source RGD Symbol Acc 727894
D11	SBR1155292	ENSRNOT00000 038480.4	Krt8	ENSRNOG00 000009779	keratin 8 Source RGD Symbol Acc 2984
D12	SBR1202944	ENSRNOT00000 002533.7	Mapk1	ENSRNOG00 000001849	mitogen activated protein kinase 1 Source RGD Symbol Acc 70500
E01	SBR1209281	ENSRNOT00000 087625.1	Mapk3	ENSRNOG00 000053583	mitogen activated protein kinase 3 Source RGD Symbol Acc 3046
E02	SBR1144517	ENSRNOT00000 065216.3	Mapk8	ENSRNOG00 000020155	mitogen-activated protein kinase 8 Source RGD Symbol Acc 621506
E03	SBR1144940	ENSRNOT00000 021537.4	Mgmt	ENSRNOG00 000016038	O-6-methylguanine-DNA methyltransferase Source RGD Symbol Acc 3087
E04	SBR1114480	ENSRNOT00000 038176.5	Mki67	ENSRNOG00 000028137	marker of proliferation Ki-67 Source RGD Symbol Acc 1305476
E05	SBR1108786	ENSRNOT00000 081718.1	Mlh1	ENSRNOG00 000033809	mutL homolog 1 Source RGD Symbol Acc 620937
E06	SBR1120605	ENSRNOT00000 022679.6	Mmp2	ENSRNOG00 000016695	matrix metalloproteinase 2 Source RGD Symbol Acc 621316
E07	SBR1206750	ENSRNOT00000 023965.3	Mmp9	ENSRNOG00 000017539	matrix metalloproteinase 9 Source RGD Symbol Acc 621320
E08	SBR1214954	ENSRNOT00000 027850.7	Muc1	ENSRNOG00 000020539	mucin 1, cell surface associated Source RGD Symbol Acc 3122
E09	SBR1106364	ENSRNOT00000 006188.5	Myc	ENSRNOG00 000004500	MYC proto-oncogene, bHLH transcription factor Source RGD Symbol Acc 3130
E10	SBR1213049	ENSRNOT00000 003658.2	Nme1	ENSRNOG00 000002693	NME/NM23 nucleoside diphosphate kinase 1 Source RGD Symbol Acc 70497
E11	SBR1183596	ENSRNOT00000 026212.7	Notch1	ENSRNOG00 000019322	notch 1 Source RGD Symbol Acc 3187
E12	SBR1127733	ENSRNOT00000 044287.4	AABR0703 1756.1	ENSRNOG00 000014096	nuclear receptor subfamily 3, group C, member 1 Source NCBI gene Acc 24413
F01	SBR1178528	ENSRNOT00000 038313.4	Pgr	ENSRNOG00 000006831	progesterone receptor Source RGD Symbol Acc 3317
F02	SBR1186883	ENSRNOT00000 014273.5	Plau	ENSRNOG00 000010516	plasminogen activator, urokinase Source RGD Symbol Acc 3343
F03	SBR1095499	ENSRNOT00000 078237.1	Prdm2	ENSRNOG00 000033522	PR/SET domain 2 Source RGD Symbol Acc 1594531
F04	SBR1174124	ENSRNOT00000 028143.3	Pten	ENSRNOG00 000020723	phosphatase and tensin homolog Source RGD Symbol Acc 61995
F05	SBR1122148	ENSRNOT00000 003567.4	Ptgs2	ENSRNOG00 000002525	prostaglandin-endoperoxide synthase 2 Source RGD Symbol Acc 620349
F06	SBR1158649	ENSRNOT00000 026699.4	Pycard	ENSRNOG00 000019675	PYD and CARD domain containing Source RGD Symbol Acc 628637
F07	SBR1099434	ENSRNOT00000 033048.6	Rarb	ENSRNOG00 000024061	retinoic acid receptor, beta Source RGD Symbol Acc 3535
F08	SBR1215724	ENSRNOT00000 037363.4	Rassf1	ENSRNOG00 000021548	Ras association domain family member 1 Source RGD Symbol Acc 1359383
F09	SBR1123205	ENSRNOT00000 021752.5	Rb1	ENSRNOG00 000016029	RB transcriptional corepressor 1 Source RGD Symbol Acc 3540
F10	SBR1126485	ENSRNOT00000 001916.2	Serpine1	ENSRNOG00 000001414	serpin family E member 1 Source RGD Symbol Acc 3249

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1202515	ENSRNOT00000043959.4	Sfn	ENSRNOG00000033153	stratifin Source RGD Symbol Acc 1304729
F12	SBR1098532	ENSRNOT00000024128.6	Sfrp1	ENSRNOG0000017783	secreted frizzled-related protein 1 Source RGD Symbol Acc 621074
G01	SBR1207856	ENSRNOT00000079381.1	Slc39a6	ENSRNOG0000028703	solute carrier family 39 member 6 Source RGD Symbol Acc 1304664
G02	SBR1128334	ENSRNOT00000081601.1	Slit2	ENSRNOG0000003840	slit guidance ligand 2 Source RGD Symbol Acc 69310
G03	SBR1127823	ENSRNOT00000073049.2	Snai2	ENSRNOG0000047699	snail family transcriptional repressor 2 Source RGD Symbol Acc 3722
G04	SBR1192294	ENSRNOT00000012739.4	Src	ENSRNOG0000009495	SRC proto-oncogene, non-receptor tyrosine kinase Source RGD Symbol Acc 620795
G05	SBR1150710	ENSRNOT00000066266.3	Tff3	ENSRNOG0000001159	trefoil factor 3 Source RGD Symbol Acc 3847
G06	SBR1143485	ENSRNOT00000028051.4	Tgfb1	ENSRNOG0000020652	transforming growth factor, beta 1 Source RGD Symbol Acc 69051
G07	SBR1160692	ENSRNOT00000083351.1	Thbs1	ENSRNOG0000045829	thrombospondin 1 Source RGD Symbol Acc 1588455
G08	SBR1172374	ENSRNOT00000046490.3	Tp53	ENSRNOG0000010756	tumor protein p53 Source RGD Symbol Acc 3889
G09	SBR1108065	ENSRNOT00000055398.2	Tp73	ENSRNOG0000024707	tumor protein p73 Source RGD Symbol Acc 1307083
G10	SBR1200999	ENSRNOT00000014763.6	Twist1	ENSRNOG0000011101	twist family bHLH transcription factor 1 Source RGD Symbol Acc 621455
G11	SBR1108862	ENSRNOT00000044163.4	Vegfa	ENSRNOG0000019598	vascular endothelial growth factor A Source RGD Symbol Acc 619991
G12	SBR1176433	ENSRNOT00000014044.6	Xbp1	ENSRNOG0000010298	X-box binding protein 1 Source RGD Symbol Acc 1303073
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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