

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

## Rat Drug Metabolism

Cat. no. 249950 SBRN-002ZA

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	Abcc3	Abcb1a	Abcc2	Abcc1	Aoc1	Adh1	Adh4	Ahr	Alad	Aldh1a1	Alox15	Alox5
B	Apoe	Amt	Asna1	Blvra	Blvrb	Ces1a	LOC1003651 12	Chat1	Comt	Cyb5r3	Cyp17a1	Cyp19a1
C	Cyp1a1	Cyp1a2	Cyp1b1	Cyp27b1	Cyp2b15	Cyp2b3	Cyp2c13	Cyp2c6v1	Cyp2c7	Cyp2e1	Cyp3a18	Cyp4b1
D	Ephx1	Faah	Fbp1	Gad1	Gad2	Gckr	Ggt1	Gpi	Gpx1	Gpx2	Gpx3	Gpx4
E	Gpx5	Gsr	Gsta1	Gsta4	Gstm1	Gstm2	Gstm3l	Gstm4	Gstm3	Gstp1	Gstt1	Hk2
F	Hsd17b1	Hsd17b2	Hsd17b3	Lpo	Marcks	Mgst1	Mgst2	Mgst3	Mpo	Mt3	Mthfr	Nat1
G	Nos2	Nos3	Nqo1	Plkr	Plkm	Pon1	Pon2	Pon3	Smarcal1	Snn	Srd5a1	Xdh
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	SBR1130301	ENSRNOT00000079711.1	Abcc3	ENSRNOG0000002948	ATP binding cassette subfamily C member 3 Source RGD Symbol Acc 71101
A02	SBR1116067	ENSRNOT00000082359.1	Abcb1a	ENSRNOG0000008012	ATP binding cassette subfamily B member 4 Source RGD Symbol Acc 620248
A03	SBR1119829	ENSRNOT00000070861.2	Abcc2	ENSRNOG0000046727	ATP binding cassette subfamily C member 2 Source RGD Symbol Acc 2366
A04	SBR1173969	ENSRNOT00000044108.5	Abcc1	ENSRNOG0000022305	ATP binding cassette subfamily C member 1 Source RGD Symbol Acc 3112
A05	SBR1108570	ENSRNOT00000059136.2	Aoc1	ENSRNOG0000008575	amine oxidase, copper containing 1 Source RGD Symbol Acc 61296
A06	SBR1143351	ENSRNOT00000036993.4	Adh1	ENSRNOG0000012436	alcohol dehydrogenase 6 (class V) Source RGD Symbol Acc 1306313
A07	SBR1097286	ENSRNOT00000090253.1	Adh4	ENSRNOG0000046357	alcohol dehydrogenase 4 (class II), pi polypeptide Source RGD Symbol Acc 71028
A08	SBR1103616	ENSRNOT00000006618.7	Ahr	ENSRNOG0000004342	aryl hydrocarbon receptor Source RGD Symbol Acc 2074
A09	SBR1187700	ENSRNOT00000077013.1	Alad	ENSRNOG0000015206	aminolevulinatase Source RGD Symbol Acc 2083
A10	SBR1184560	ENSRNOT00000024000.6	Aldh1a1	ENSRNOG0000017619	aldehyde dehydrogenase 1 family, member A1 Source RGD Symbol Acc 2087
A11	SBR1207255	ENSRNOT00000026038.6	Alox15	ENSRNOG0000019183	arachidonate 15-lipoxygenase Source RGD Symbol Acc 70493
A12	SBR1113879	ENSRNOT00000017633.5	Alox5	ENSRNOG0000012972	arachidonate 5-lipoxygenase Source RGD Symbol Acc 2096
B01	SBR1123572	ENSRNOT00000080453.1	ApoE	ENSRNOG0000018454	apolipoprotein E Source RGD Symbol Acc 2138
B02	SBR1145957	ENSRNOT00000091681.1	Arnt	ENSRNOG0000031174	aryl hydrocarbon receptor nuclear translocator Source RGD Symbol Acc 2153
B03	SBR1098526	ENSRNOT00000067518.1	AsnA1	ENSRNOG0000003747	arsA arsenite transporter, ATP-binding, homolog 1 (bacterial) Source RGD Symbol Acc 1307906
B04	SBR1190367	ENSRNOT00000015843.6	Bilvra	ENSRNOG0000011778	biliverdin reductase A Source RGD Symbol Acc 620721
B05	SBR1100576	ENSRNOT00000031026.4	Bilvrb	ENSRNOG0000024410	biliverdin reductase B Source RGD Symbol Acc 1306080
B06	SBR1188343	ENSRNOT00000060929.2	Ces1a	ENSRNOG0000039725	carboxylesterase 1A Source RGD Symbol Acc 1583671
B07	SBR1112372	ENSRNOT00000045656.5	LOC100365112	ENSRNOG0000036571	carboxylesterase-like Source RGD Symbol Acc 2319661
B08	SBR1125212	ENSRNOT00000010510.5	Chst1	ENSRNOG0000007989	carbohydrate sulfotransferase 1 Source RGD Symbol Acc 1308142
B09	SBR1128940	ENSRNOT00000050269.5	Comt	ENSRNOG0000001889	catechol-O-methyltransferase Source RGD Symbol Acc 2379
B10	SBR1181279	ENSRNOT00000064700.3	Cyb5r3	ENSRNOG0000009592	cytochrome b5 reductase 3 Source RGD Symbol Acc 2502
B11	SBR1128529	ENSRNOT00000027160.4	Cyp17a1	ENSRNOG0000020035	cytochrome P450, family 17, subfamily a, polypeptide 1 Source RGD Symbol Acc 2456
B12	SBR1101306	ENSRNOT00000000212.7	Cyp19a1	ENSRNOG0000000196	cytochrome P450, family 19, subfamily a, polypeptide 1 Source RGD Symbol Acc 2457
C01	SBR1197501	ENSRNOT00000026473.4	Cyp1a1	ENSRNOG0000019500	cytochrome P450, family 1, subfamily a, polypeptide 1 Source RGD Symbol Acc 2458
C02	SBR1120481	ENSRNOT00000021653.7	Cyp1a2	ENSRNOG0000016173	cytochrome P450, family 1, subfamily a, polypeptide 2 Source RGD Symbol Acc 2459
C03	SBR1097149	ENSRNOT00000082017.1	Cyp1b1	ENSRNOG0000040287	cytochrome P450, family 1, subfamily b, polypeptide 1 Source RGD Symbol Acc 2460
C04	SBR1167575	ENSRNOT00000084933.1	Cyp27b1	ENSRNOG0000046214	cytochrome P450, family 27, subfamily b, polypeptide 1 Source RGD Symbol Acc 69192
C05	SBR1132055	ENSRNOT00000002054.3	Cyp2b15	ENSRNOG0000020801	cytochrome P450, family 2, subfamily b, polypeptide 15 Source RGD Symbol Acc 1596474
C06	SBR1180676	ENSRNOT00000034845.5	Cyp2b3	ENSRNOG0000033164	cytochrome P450, family 2, subfamily b, polypeptide 3 Source RGD Symbol Acc 628627
C07	SBR1149228	ENSRNOT00000071633.3	Cyp2c13	ENSRNOG0000049464	cytochrome P450, family 2, subfamily c, polypeptide 13 Source RGD Symbol Acc 620363
C08	SBR1094603	ENSRNOT00000092985.1	Cyp2c6v1	ENSRNOG0000024016	cytochrome P450, family 2, subfamily c, polypeptide 6, variant 1 Source RGD Symbol Acc 619934
C09	SBR1213983	ENSRNOT00000040325.5	Cyp2c7	ENSRNOG0000021405	cytochrome P450, family 2, subfamily c, polypeptide 7 Source RGD Symbol Acc 620379
C10	SBR1157610	ENSRNOT00000078080.1	Cyp2e1	ENSRNOG0000012458	cytochrome P450, family 2, subfamily e, polypeptide 1 Source RGD Symbol Acc 2475
		ENSRNOT000000		ENSRNOG00	cytochrome P450, family 3, subfamily a, polypeptide 18 Source RGD Symbol

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1122407	075671.3	Cyp3a18	000000969	Acc 628709
C12	SBR1186277	ENSRNOT00000013321.6	Cyp4b1	ENSRNOG0000055078	cytochrome P450, family 4, subfamily b, polypeptide 1 Source RGD Symbol Acc 2480
D01	SBR1192455	ENSRNOT00000004780.4	Ephx1	ENSRNOG0000003515	epoxide hydrolase 1 Source RGD Symbol Acc 2557
D02	SBR1185593	ENSRNOT00000015961.6	Faah	ENSRNOG0000011019	fatty acid amide hydrolase Source RGD Symbol Acc 61808
D03	SBR1097930	ENSRNOT00000023685.6	Fbp1	ENSRNOG0000017597	fructose-bisphosphatase 1 Source RGD Symbol Acc 2595
D04	SBR1132392	ENSRNOT00000087712.1	Gad1	ENSRNOG0000000007	glutamate decarboxylase 1 Source RGD Symbol Acc 2652
D05	SBR1127482	ENSRNOT00000024901.4	Gad2	ENSRNOG0000018200	glutamate decarboxylase 2 Source RGD Symbol Acc 2653
D06	SBR1124205	ENSRNOT00000073228.2	Gckr	ENSRNOG0000048874	glucokinase regulator Source RGD Symbol Acc 2671
D07	SBR1121913	ENSRNOT00000074533.2	Ggt1	ENSRNOG0000047697	gamma-glutamyltransferase 1 Source RGD Symbol Acc 2683
D08	SBR1214960	ENSRNOT00000032613.4	Gpi	ENSRNOG0000023150	glucose-6-phosphate isomerase Source RGD Symbol Acc 2727
D09	SBR1185178	ENSRNOT00000073247.2	Gpx1	ENSRNOG0000048812	glutathione peroxidase 1 Source RGD Symbol Acc 2729
D10	SBR1133643	ENSRNOT00000080270.1	Gpx2	ENSRNOG0000055672	glutathione peroxidase 2 Source RGD Symbol Acc 727780
D11	SBR1166361	ENSRNOT00000079830.1	Gpx3	ENSRNOG0000052564	glutathione peroxidase 3 Source RGD Symbol Acc 69224
D12	SBR1097775	ENSRNOT00000093632.1	Gpx4	ENSRNOG0000013604	glutathione peroxidase 4 Source RGD Symbol Acc 69226
E01	SBR1158462	ENSRNOT00000084180.1	Gpx5	ENSRNOG0000057180	glutathione peroxidase 5 Source RGD Symbol Acc 69227
E02	SBR1141526	ENSRNOT00000020252.6	Gsr	ENSRNOG0000014915	glutathione-disulfide reductase Source RGD Symbol Acc 621747
E03	SBR1159122	ENSRNOT00000018325.4	Gsta1	ENSRNOG0000013484	glutathione S-transferase alpha 1 Source RGD Symbol Acc 2753
E04	SBR1181520	ENSRNOT00000090146.1	Gsta4	ENSRNOG0000030449	glutathione S-transferase alpha 4 Source RGD Symbol Acc 1309970
E05	SBR1187255	ENSRNOT00000047139.3	Gstm1	ENSRNOG0000029726	glutathione S-transferase mu 1 Source RGD Symbol Acc 2755
E06	SBR1204527	ENSRNOT00000081501.1	Gstm2	ENSRNOG0000018937	glutathione S-transferase mu 2 Source RGD Symbol Acc 2756
E07	SBR1145465	ENSRNOT00000025800.2	Gstm3l	ENSRNOG0000019058	glutathione S-transferase mu 3-like Source RGD Symbol Acc 620381
E08	SBR1156321	ENSRNOT00000025994.6	Gstm4	ENSRNOG0000019221	glutathione S-transferase mu 4 Source RGD Symbol Acc 1565825
E09	SBR1208337	ENSRNOT00000072342.2	Gstm3	ENSRNOG0000049743	glutathione S-transferase mu 3 Source RGD Symbol Acc 11402080
E10	SBR1125046	ENSRNOT00000024601.4	Gstp1	ENSRNOG0000018237	glutathione S-transferase pi 1 Source RGD Symbol Acc 2758
E11	SBR1150596	ENSRNOT00000001669.4	Gsth1	ENSRNOG0000049771	glutathione S-transferase theta 1 Source RGD Symbol Acc 2765
E12	SBR1148823	ENSRNOT00000008813.3	Hk2	ENSRNOG0000006116	hexokinase 2 Source RGD Symbol Acc 2797
F01	SBR1107802	ENSRNOT00000026878.5	Hsd17b1	ENSRNOG0000019830	hydroxysteroid (17-beta) dehydrogenase 1 Source RGD Symbol Acc 2836
F02	SBR1116907	ENSRNOT00000018795.3	Hsd17b2	ENSRNOG0000013982	hydroxysteroid (17-beta) dehydrogenase 2 Source RGD Symbol Acc 621803
F03	SBR1147515	ENSRNOT00000025850.3	Hsd17b3	ENSRNOG0000019096	hydroxysteroid (17-beta) dehydrogenase 3 Source RGD Symbol Acc 621805
F04	SBR1119957	ENSRNOT00000011402.4	Lpo	ENSRNOG0000008422	lactoperoxidase Source RGD Symbol Acc 1310051
F05	SBR1193030	ENSRNOT00000000707.6	Marcks	ENSRNOG0000000579	myristoylated alanine rich protein kinase C substrate Source RGD Symbol Acc 3028
F06	SBR1203930	ENSRNOT00000010579.7	Mgst1	ENSRNOG0000007743	microsomal glutathione S-transferase 1 Source RGD Symbol Acc 70927
F07	SBR1137181	ENSRNOT00000088846.1	Mgst2	ENSRNOG0000061857	microsomal glutathione S-transferase 2 Source RGD Symbol Acc 1311218
F08	SBR1200351	ENSRNOT00000005719.7	Mgst3	ENSRNOG0000004245	microsomal glutathione S-transferase 3 Source RGD Symbol Acc 1306373
F09	SBR1165540	ENSRNOT00000081951.1	Mpo	ENSRNOG0000008310	myeloperoxidase Source RGD Symbol Acc 1592081
F10	SBR1182586	ENSRNOT00000025669.5	Mt3	ENSRNOG0000018958	metallothionein 3 Source RGD Symbol Acc 621252

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1164428	ENSRNOT00000011384.7	Mthfr	ENSRNOG0000008553	methylenetetrahydrofolate reductase Source RGD Symbol Acc 1309952
F12	SBR1099708	ENSRNOT00000018854.6	Nat1	ENSRNOG0000014055	N-acetyltransferase 1 Source RGD Symbol Acc 70490
G01	SBR1197401	ENSRNOT00000073138.2	Nos2	ENSRNOG0000057443	similar to Nitric oxide synthase, inducible (NOS type II) (Inducible NO synthase) (Inducible NOS) (iNOS) Source RGD Symbol Acc 1598227
G02	SBR1203756	ENSRNOT00000013058.4	Nos3	ENSRNOG0000009348	nitric oxide synthase 3 Source RGD Symbol Acc 3186
G03	SBR1125692	ENSRNOT00000017174.5	Nqo1	ENSRNOG0000012772	NAD(P)H quinone dehydrogenase 1 Source RGD Symbol Acc 2503
G04	SBR1145166	ENSRNOT00000027700.6	Pklr	ENSRNOG0000020420	pyruvate kinase L/R Source RGD Symbol Acc 3336
G05	SBR1193295	ENSRNOT00000015332.7	Pkm	ENSRNOG0000011329	pyruvate kinase M1/2 Source RGD Symbol Acc 3337
G06	SBR1161072	ENSRNOT00000011823.6	Pon1	ENSRNOG0000008902	paraoxonase 1 Source RGD Symbol Acc 620062
G07	SBR1118492	ENSRNOT00000036460.3	Pon2	ENSRNOG0000009112	paraoxonase 2 Source RGD Symbol Acc 1309954
G08	SBR1147236	ENSRNOT00000012050.4	Pon3	ENSRNOG0000009096	paraoxonase 3 Source RGD Symbol Acc 1302965
G09	SBR1183618	ENSRNOT00000022459.5	Smarca1	ENSRNOG0000016503	Swi/SNF related matrix associated, actin dependent regulator of chromatin, subfamily a-like 1 Source RGD Symbol Acc 1306134
G10	SBR1162832	ENSRNOT00000088279.1	Snn	ENSRNOG0000058739	stannin Source RGD Symbol Acc 3730
G11	SBR1185116	ENSRNOT00000023659.6	Srd5a1	ENSRNOG0000017601	steroid 5 alpha-reductase 1 Source RGD Symbol Acc 3757
G12	SBR1150107	ENSRNOT00000009634.6	Xdh	ENSRNOG0000007081	xanthine dehydrogenase Source RGD Symbol Acc 62043
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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