

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

## Rat Drug Metabolism: Phase I Enzymes

Cat. no. 249950 SBRN-069ZA

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>	A3galt2	A4galt	Aanat	Acsi1	Acsi3	Acsi4	Acsm3	Agxt	Alg5	As3mt	Asmt	Baat
<b>B</b>	Kyat1	Ces1d	Ces1a	LOC1003651 12	Ces5a	Chst7	Comt	Ddost	Eef1b2	Ephx1	Ephx2	Galnt1
<b>C</b>	Galnt3	Galnt2	Gamt	Gcnt1	Gcnt2	Glyat	Gnmt	Gsta1	Gsta4	Gstk1	Gstm1	Gstm2
<b>D</b>	Gstm3l	Gstm4	Gstm3	Gsto1	Gsto2	Gstp1	Gstt1	Gstt2	Has1	Hnmt	Inmt	Mgat1
<b>E</b>	Mgat2	Mgat1	Mgat2	Mgat3	Nat1	Nat2	Nnmt	Nqo1	Nqo2	Pomgn1	Ptges	Ptges2
<b>F</b>	Sat1	Sult1a1	Sult1b1	LOC1009105 26	Sult1c3	Sult1e1	Sult2b1	Sult4a1	Sult5a1	Sult6b1	Tst	Ugcg
<b>G</b>	Gsta2	Aox1	Ugt1a3	Ugt2a3	Gsta3	Hsd17b3	Pon3	Ugt3a2	Ugt2b10	Ugt2b	Ugt8	Xdh
<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	SBR1167093	ENSRNOT00000007851.5	A3galt2	ENSRNOG0000005935	alpha 1,3-galactosyltransferase 2 Source RGD Symbol Acc 727913
A02	SBR1106358	ENSRNOT00000012914.5	A4galt	ENSRNOG0000009736	alpha 1,4-galactosyltransferase Source RGD Symbol Acc 621583
A03	SBR1146770	ENSRNOT00000015221.4	Aanat	ENSRNOG0000011182	aralkylamine N-acetyltransferase Source RGD Symbol Acc 2006
A04	SBR1160500	ENSRNOT00000014235.3	Acs1	ENSRNOG0000010633	acyl-CoA synthetase long-chain family member 1 Source RGD Symbol Acc 2015
A05	SBR1174444	ENSRNOT00000020161.2	Acs3	ENSRNOG0000014718	acyl-CoA synthetase long-chain family member 3 Source RGD Symbol Acc 70552
A06	SBR1194850	ENSRNOT00000026057.6	Acs4	ENSRNOG0000019180	acyl-CoA synthetase long-chain family member 4 Source RGD Symbol Acc 69401
A07	SBR1151471	ENSRNOT00000020039.6	Acsm3	ENSRNOG0000032246	acyl-CoA synthetase medium-chain family member 3 Source RGD Symbol Acc 62086
A08	SBR1096549	ENSRNOT00000029127.3	Agxt	ENSRNOG0000023856	alanine--glyoxylate and serine--pyruvate aminotransferase Source RGD Symbol Acc 2073
A09	SBR1143642	ENSRNOT00000088575.1	Alg5	ENSRNOG0000058694	ALG5, dolichyl-phosphate beta-glucosyltransferase Source RGD Symbol Acc 1308900
A10	SBR1188353	ENSRNOT00000027223.6	As3mt	ENSRNOG0000020081	arsenite methyltransferase Source RGD Symbol Acc 621325
A11	SBR1096030	ENSRNOT000000011791.6	Asmt	ENSRNOG0000001324	acetylserotonin O-methyltransferase Source RGD Symbol Acc 708472
A12	SBR1142614	ENSRNOT00000009777.5	Baat	ENSRNOG0000007395	bile acid CoA amino acid N-acyltransferase Source RGD Symbol Acc 2190
B01	SBR1120238	ENSRNOT00000021865.6	Kyat1	ENSRNOG0000016097	kynurenine aminotransferase 1 Source RGD Symbol Acc 1306912
B02	SBR1105555	ENSRNOT00000021812.6	Ces1d	ENSRNOG0000015519	carboxylesterase 1D Source RGD Symbol Acc 70896
B03	SBR1188343	ENSRNOT00000060929.2	Ces1a	ENSRNOG0000039725	carboxylesterase 1A Source RGD Symbol Acc 1583671
B04	SBR1112372	ENSRNOT00000045656.5	LOC100365112	ENSRNOG0000036571	carboxylesterase-like Source RGD Symbol Acc 2319661
B05	SBR1194748	ENSRNOT00000049452.4	Ces5a	ENSRNOG0000025710	carboxylesterase 5A Source RGD Symbol Acc 1549717
B06	SBR1148664	ENSRNOT00000005630.5	Chst7	ENSRNOG000004258	carbohydrate sulfotransferase 7 Source RGD Symbol Acc 1303028
B07	SBR1128940	ENSRNOT00000050269.5	Comt	ENSRNOG0000001889	catechol-O-methyltransferase Source RGD Symbol Acc 2379
B08	SBR1107445	ENSRNOT00000067228.3	Ddost	ENSRNOG0000015079	dolichyl-diphosphooligosaccharide--protein glycosyltransferase non-catalytic subunit Source RGD Symbol Acc 1308970
B09	SBR1122772	ENSRNOT00000034740.4	Eef1b2	ENSRNOG0000024186	eukaryotic translation elongation factor 1 beta 2 Source RGD Symbol Acc 1311415
B10	SBR1192455	ENSRNOT00000004780.4	Ephx1	ENSRNOG0000003515	epoxide hydrolase 1 Source RGD Symbol Acc 2557
B11	SBR1172349	ENSRNOT00000023385.7	Ephx2	ENSRNOG0000017286	epoxide hydrolase 2 Source RGD Symbol Acc 620732
B12	SBR1158251	ENSRNOT00000022117.4	Galnt1	ENSRNOG0000016207	polypeptide N-acetylgalactosaminyltransferase 1 Source RGD Symbol Acc 620358
C01	SBR1112532	ENSRNOT00000007615.6	Galnt3	ENSRNOG0000005727	polypeptide N-acetylgalactosaminyltransferase 3 Source RGD Symbol Acc 1306443
C02	SBR1095459	ENSRNOT00000080860.1	Galnt2	ENSRNOG0000019143	polypeptide N-acetylgalactosaminyltransferase 2 Source RGD Symbol Acc 1310692
C03	SBR1096666	ENSRNOT00000028969.4	Gamt	ENSRNOG0000024577	guanidinoacetate N-methyltransferase Source RGD Symbol Acc 2659
C04	SBR1128083	ENSRNOT00000074939.2	Gcnt1	ENSRNOG0000050534	glucosaminyl (N-acetyl) transferase 1 Source RGD Symbol Acc 621370
C05	SBR1146782	ENSRNOT00000035448.4	Gcnt2	ENSRNOG0000023778	glucosaminyl (N-acetyl) transferase 2 Source RGD Symbol Acc 1303198
C06	SBR1165162	ENSRNOT00000016454.5	Glyat	ENSRNOG0000012142	glycine-N-acyltransferase Source RGD Symbol Acc 1307163
C07	SBR1166651	ENSRNOT00000022307.4	Gnmt	ENSRNOG0000016349	glycine N-methyltransferase Source RGD Symbol Acc 2719
C08	SBR1159122	ENSRNOT00000018325.4	Gsta1	ENSRNOG0000013484	glutathione S-transferase alpha 1 Source RGD Symbol Acc 2753
C09	SBR1181520	ENSRNOT00000090146.1	Gsta4	ENSRNOG0000030449	glutathione S-transferase alpha 4 Source RGD Symbol Acc 1309970
C10	SBR1138442	ENSRNOT00000022275.4	Gstk1	ENSRNOG0000016484	glutathione S-transferase kappa 1 Source RGD Symbol Acc 735188
		ENSRNOT000000		ENSRNOG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBR1187255	047139.3	Gstm1	000029726	glutathione S-transferase mu 1 Source RGD Symbol Acc 2755
C12	SBR1204527	ENSRNOT00000081501.1	Gstm2	ENSRNOG0000018937	glutathione S-transferase mu 2 Source RGD Symbol Acc 2756
D01	SBR1145465	ENSRNOT00000025800.2	Gstm3l	ENSRNOG0000019058	glutathione S-transferase mu 3-like Source RGD Symbol Acc 620381
D02	SBR1156321	ENSRNOT00000025994.6	Gstm4	ENSRNOG0000019221	glutathione S-transferase mu 4 Source RGD Symbol Acc 1565825
D03	SBR1208337	ENSRNOT00000072342.2	Gstm3	ENSRNOG0000049743	glutathione S-transferase mu 3 Source RGD Symbol Acc 11402080
D04	SBR1181824	ENSRNOT00000076367.2	Gsto1	ENSRNOG0000028746	glutathione S-transferase omega 1 Source RGD Symbol Acc 70952
D05	SBR1198801	ENSRNOT00000076751.1	Gsto2	ENSRNOG0000012801	glutathione S-transferase omega-2 Source RGD Symbol Acc 9449876
D06	SBR1125046	ENSRNOT00000024601.4	Gstp1	ENSRNOG0000018237	glutathione S-transferase pi 1 Source RGD Symbol Acc 2758
D07	SBR1150596	ENSRNOT00000001669.4	Gsth1	ENSRNOG0000049771	glutathione S-transferase theta 1 Source RGD Symbol Acc 2765
D08	SBR1106514	ENSRNOT00000081140.1	Gsth2	ENSRNOG0000052415	glutathione S-transferase, theta 2 Source RGD Symbol Acc 69362
D09	SBR1209491	ENSRNOT00000014824.4	Has1	ENSRNOG0000010994	hyaluronan synthase 1 Source RGD Symbol Acc 708528
D10	SBR1110568	ENSRNOT00000007471.6	Hnmt	ENSRNOG0000005223	histamine N-methyltransferase Source RGD Symbol Acc 71049
D11	SBR1116450	ENSRNOT00000015316.6	Inmt	ENSRNOG0000011250	indolethylamine N-methyltransferase Source RGD Symbol Acc 1597087
D12	SBR1171776	ENSRNOT00000085832.1	Mgat1	ENSRNOG0000031208	mannosyl (alpha-1,3-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase Source RGD Symbol Acc 620097
E01	SBR1207798	ENSRNOT00000005608.5	Mgat2	ENSRNOG0000004234	mannosyl (alpha-1,6-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase Source RGD Symbol Acc 620098
E02	SBR1203930	ENSRNOT00000010579.7	Mgst1	ENSRNOG0000007743	microsomal glutathione S-transferase 1 Source RGD Symbol Acc 70927
E03	SBR1137181	ENSRNOT00000088846.1	Mgst2	ENSRNOG0000061857	microsomal glutathione S-transferase 2 Source RGD Symbol Acc 1311218
E04	SBR1200351	ENSRNOT00000005719.7	Mgst3	ENSRNOG0000004245	microsomal glutathione S-transferase 3 Source RGD Symbol Acc 1306373
E05	SBR1099708	ENSRNOT00000018854.6	Nat1	ENSRNOG0000014055	N-acetyltransferase 1 Source RGD Symbol Acc 70490
E06	SBR1199144	ENSRNOT00000044198.1	Nat2	ENSRNOG0000049498	N-acetyltransferase 2 Source RGD Symbol Acc 70492
E07	SBR1156727	ENSRNOT00000007789.5	Nnmt	ENSRNOG0000005930	nicotinamide N-methyltransferase Source RGD Symbol Acc 1309606
E08	SBR1125692	ENSRNOT00000017174.5	Nqo1	ENSRNOG0000012772	NAD(P)H quinone dehydrogenase 1 Source RGD Symbol Acc 2503
E09	SBR1216443	ENSRNOT00000024141.5	Nqo2	ENSRNOG0000017820	N-ribosylidihyronicotinamide quinone reductase 2 Source RGD Symbol Acc 1303320
E10	SBR1208331	ENSRNOT00000035312.5	Pomgnt1	ENSRNOG0000023455	protein O-linked mannose N-acetylglucosaminyltransferase 1 (beta 1,2-) Source RGD Symbol Acc 1359396
E11	SBR1156570	ENSRNOT00000045993.2	Ptges	ENSRNOG0000006320	prostaglandin E synthase Source RGD Symbol Acc 62076
E12	SBR1174854	ENSRNOT00000019184.6	Ptges2	ENSRNOG0000014050	prostaglandin E synthase 2 Source RGD Symbol Acc 1310836
F01	SBR1111311	ENSRNOT00000068078.2	Sat1	ENSRNOG0000003809	spermidine/spermine N1-acetyl transferase 1 Source RGD Symbol Acc 1586174
F02	SBR1123229	ENSRNOT00000026186.4	Sult1a1	ENSRNOG0000019342	sulfotransferase family 1A member 1 Source RGD Symbol Acc 3767
F03	SBR1195529	ENSRNOT00000002699.5	Sult1b1	ENSRNOG0000001967	sulfotransferase family 1B member 1 Source RGD Symbol Acc 708534
F04	SBR1212638	ENSRNOT00000081413.1	LOC100910526	ENSRNOG0000040215	sulfotransferase 1C2-like Source RGD Symbol Acc 6497849
F05	SBR1120756	ENSRNOT00000082530.1	Sult1c3	ENSRNOG0000011269	sulfotransferase family 1C member 3 Source RGD Symbol Acc 3768
F06	SBR1156150	ENSRNOT00000002680.5	Sult1e1	ENSRNOG0000001957	sulfotransferase family 1E member 1 Source RGD Symbol Acc 3776
F07	SBR1161476	ENSRNOT00000067430.3	Sult2b1	ENSRNOG0000021046	sulfotransferase family 2B member 1 Source RGD Symbol Acc 1308882
F08	SBR1120762	ENSRNOT00000075099.2	Sult4a1	ENSRNOG0000046975	sulfotransferase family 4A, member 1 Source RGD Symbol Acc 69292
F09	SBR1102176	ENSRNOT00000051452.5	Sult5a1	ENSRNOG0000015695	sulfotransferase family 5A, member 1 Source RGD Symbol Acc 1310002
F10	SBR1132645	ENSRNOT00000075000.1	Sult6b1	ENSRNOG0000049335	sulfotransferase family 6B member 1 Source RGD Symbol Acc 1598187

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBR1134544	ENSRNOT00000050511.5	Tst	ENSRNOG0000000186	thiosulfate sulfurtransferase Source RGD Symbol Acc 3913
F12	SBR1209417	ENSRNOT00000021110.4	Ugcg	ENSRNOG0000015644	UDP-glucose ceramide glucosyltransferase Source RGD Symbol Acc 621870
G01	SBR1174538	ENSRNOT00000032185.5	Gsta2	ENSRNOG0000029861	glutathione S-transferase alpha 2 Source RGD Symbol Acc 2754
G02	SBR1205834	ENSRNOT00000068633.4	Aox1	ENSRNOG0000015354	aldehyde oxidase 1 Source RGD Symbol Acc 620528
G03	SBR1165510	ENSRNOT00000025652.8	Ugt1a3	ENSRNOG0000018740	UDP glycosyltransferase 1 family, polypeptide A3 Source RGD Symbol Acc 1549728
G04	SBR1180818	ENSRNOT00000002704.6	Ugt2a3	ENSRNOG0000001973	UDP glucuronosyltransferase family 2 member A3 Source RGD Symbol Acc 1308444
G05	SBR1188698	ENSRNOT00000077372.1	Gsta3	ENSRNOG0000056847	glutathione S-transferase alpha 3 Source RGD Symbol Acc 1591980
G06	SBR1147515	ENSRNOT00000025850.3	Hsd17b3	ENSRNOG0000019096	hydroxysteroid (17-beta) dehydrogenase 3 Source RGD Symbol Acc 621805
G07	SBR1147236	ENSRNOT00000012050.4	Pon3	ENSRNOG0000009096	paraoxonase 3 Source RGD Symbol Acc 1302965
G08	SBR1136787	ENSRNOT00000081192.1	Ugt3a2	ENSRNOG0000059568	UDP glycosyltransferase 3 family, polypeptide A2 Source RGD Symbol Acc 1564365
G09	SBR1184486	ENSRNOT00000089471.1	Ugt2b10	ENSRNOG0000001990	UDP glucuronosyltransferase 2 family, polypeptide B10 Source RGD Symbol Acc 1309989
G10	SBR1207042	ENSRNOT00000063915.3	Ugt2b	ENSRNOG0000046540	UDP glucuronosyltransferase family 2 member B15 Source RGD Symbol Acc 628623
G11	SBR1192108	ENSRNOT00000012676.4	Ugt8	ENSRNOG0000009345	UDP glycosyltransferase 8 Source RGD Symbol Acc 3938
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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