

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

## Human Fatty Liver

Cat. no. 249950 SBHS-157ZR

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
A	ABCA1	ACACA	ACADL	ACLY	ACOX1	ACSL5	ACSM3	ADIPOR1	ADIPOR2	AKT1	APOA1	APOB
B	APOC3	APOE	ATP5F1C	CASP3	CD36	CEBPB	CNBP	CPT1A	CPT2	CYP2E1	CYP7A1	DGAT2
C	FABP1	FABP3	FABP5	FAS	FASN	FOXA2	FOXO1	G6PC	G6PD	GCK	GK	GSK3B
D	HMGCR	HNF4A	IFNG	IGF1	IGFBP1	IL10	IL1B	IL6	INSR	IRS1	LDLR	LEPR
E	LPL	MAPK1	MAPK8	MLXIPL	MTOR	NDUFB6	NFKB1	NR1H2	NR1H3	NR1H4	PCK2	PKD4
F	PIK3CA	PIK3R1	PKLR	PNPLA3	PPA1	PPARA	PPARG	PPARGC1A	PRKAA1	PTFN1	RBP4	RXRA
G	SCD	SERPINE1	SLC27A5	SLC2A1	SLC2A2	SLC2A4	SOC3S	SREBF1	SREBF2	STAT3	TNF	XBP1
H	ACTB	B2M	GAPDH	HRPT1	RPLP0	HGDC	QIC	QIC	QIC	PPC	PPC	PPC

## Gene table: QuantiNova LNA PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	SBH0311739	ENST00000423487.6	ABCA1	ENSG00000165029	ATP binding cassette subfamily A member 1 Source HGNC Symbol Acc HGNC 29
A02	SBH0228804	ENST00000617649.4	ACACA	ENSG00000278540	acetyl-CoA carboxylase alpha Source HGNC Symbol Acc HGNC 84
A03	SBH0609590	ENST00000482502.1	ACADL	ENSG00000115361	acyl-CoA dehydrogenase long chain Source HGNC Symbol Acc HGNC 88
A04	SBH1219718	ENST00000590770.5	ACLY	ENSG00000131473	ATP citrate lyase Source HGNC Symbol Acc HGNC 115
A05	SBH0169326	ENST00000293217.10	ACOX1	ENSG00000161533	acyl-CoA oxidase 1 Source HGNC Symbol Acc HGNC 119
A06	SBH0217698	ENST00000356116.5	ACSL5	ENSG00000197142	acyl-CoA synthetase long chain family member 5 Source HGNC Symbol Acc HGNC 16526
A07	SBH0585903	ENST00000567387.5	ACSM3	ENSG00000005187	acyl-CoA synthetase medium chain family member 3 Source HGNC Symbol Acc HGNC 10522
A08	SBH0648796	ENST00000340990.10	ADIPOR1	ENSG00000159346	adiponectin receptor 1 Source HGNC Symbol Acc HGNC 24040
A09	SBH0568791	ENST00000543456.1	ADIPOR2	ENSG00000006831	adiponectin receptor 2 Source HGNC Symbol Acc HGNC 24041
A10	SBH0095396	ENST00000555528.5	AKT1	ENSG00000142208	AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391
A11	SBH0583640	ENST00000375320.5	APOA1	ENSG00000118137	apolipoprotein A1 Source HGNC Symbol Acc HGNC 600
A12	SBH0382003	ENST00000399256.4	APOB	ENSG00000084674	apolipoprotein B Source HGNC Symbol Acc HGNC 603
B01	SBH0457302	ENST00000375345.3	APOC3	ENSG00000110245	apolipoprotein C3 Source HGNC Symbol Acc HGNC 610
B02	SBH0562930	ENST00000434152.5	APOE	ENSG00000130203	apolipoprotein E Source HGNC Symbol Acc HGNC 613
B03	SBH0249503	ENST00000335698.4	ATP5F1C	ENSG00000165629	ATP synthase F1 subunit gamma Source HGNC Symbol Acc HGNC 833
B04	SBH1219824	ENST00000308394.9	CASP3	ENSG00000164305	caspase 3 Source HGNC Symbol Acc HGNC 1504
B05	SBH0074710	ENST00000441109.6	CD36	ENSG00000135218	CD36 molecule Source HGNC Symbol Acc HGNC 1663
B06	SBH0569983	ENST00000303004.4	CEBPB	ENSG00000172216	CCAAT enhancer binding protein beta Source HGNC Symbol Acc HGNC 1834
B07	SBH0555395	ENST00000446936.6	CNBP	ENSG00000169714	CCHC-type zinc finger nucleic acid binding protein Source HGNC Symbol Acc HGNC 13164
B08	SBH0531896	ENST00000539743.5	CPT1A	ENSG00000110090	carnitine palmitoyltransferase 1A Source HGNC Symbol Acc HGNC 2328
B09	SBH1219910	ENST00000636891.1	CPT2	ENSG00000157184	carnitine palmitoyltransferase 2 Source HGNC Symbol Acc HGNC 2330
B10	SBH0164427	ENST00000418356.1	CYP2E1	ENSG00000130649	cytochrome P450 family 2 subfamily E member 1 Source HGNC Symbol Acc HGNC 2631
B11	SBH0038066	ENST00000301645.4	CYP7A1	ENSG00000167910	cytochrome P450 family 7 subfamily A member 1 Source HGNC Symbol Acc HGNC 2651
B12	SBH0123747	ENST00000604935.5	DGAT2	ENSG00000062282	diacylglycerol O-acyltransferase 2 Source HGNC Symbol Acc HGNC 16940
C01	SBH1219991	ENST00000393750.3	FABP1	ENSG00000163586	fatty acid binding protein 1 Source HGNC Symbol Acc HGNC 3555
C02	SBH0060313	ENST00000373713.6	FABP3	ENSG00000121769	fatty acid binding protein 3 Source HGNC Symbol Acc HGNC 3557
C03	SBH0233621	ENST00000396359.1	FABP5	ENSG00000164687	fatty acid binding protein 5 Source HGNC Symbol Acc HGNC 3560
C04	SBH1219994	ENST00000652046.1	FAS	ENSG00000026103	Fas cell surface death receptor Source HGNC Symbol Acc HGNC 11920
C05	SBH0282662	ENST00000635197.1	FASN	ENSG00000169710	fatty acid synthase Source HGNC Symbol Acc HGNC 3594
C06	SBH0328492	ENST00000419308.6	FOXA2	ENSG00000125798	forkhead box A2 Source HGNC Symbol Acc HGNC 5022
C07	SBH0594989	ENST00000379561.6	FOXO1	ENSG00000150907	forkhead box O1 Source HGNC Symbol Acc HGNC 3819
C08	SBH0049367	ENST00000592383.5	G6PC	ENSG00000131482	glucose-6-phosphatase catalytic subunit Source HGNC Symbol Acc HGNC 4056
C09	SBH0586368	ENST00000621232.5	G6PD	ENSG00000160211	glucose-6-phosphate dehydrogenase Source HGNC Symbol Acc HGNC 4057
C10	SBH1220024	ENST00000616242.4	GCK	ENSG00000106633	glucokinase Source HGNC Symbol Acc HGNC 4195
		ENST00000378		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0594548	946.7	GK	198814	glycerol kinase Source HGNC Symbol Acc HGNC 4289
C12	SBH0579883	ENST00000316626.5	GSK3B	ENSG00000082701	glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617
D01	SBH0118882	ENST00000511206.5	HMGCR	ENSG000000113161	3-hydroxy-3-methylglutaryl-CoA reductase Source HGNC Symbol Acc HGNC 5006
D02	SBH0483648	ENST00000609795.5	HNF4A	ENSG000000101076	hepatocyte nuclear factor 4 alpha Source HGNC Symbol Acc HGNC 5024
D03	SBH1220090	ENST00000229135.4	IFNG	ENSG000000111537	interferon gamma Source HGNC Symbol Acc HGNC 5438
D04	SBH1220091	ENST00000337514.10	IGF1	ENSG000000017427	insulin like growth factor 1 Source HGNC Symbol Acc HGNC 5464
D05	SBH0586817	ENST00000468955.1	IGFBP1	ENSG000000146678	insulin like growth factor binding protein 1 Source HGNC Symbol Acc HGNC 5469
D06	SBH1220095	ENST00000423557.1	IL10	ENSG000000136634	interleukin 10 Source HGNC Symbol Acc HGNC 5962
D07	SBH0079231	ENST00000263341.6	IL1B	ENSG000000125538	interleukin 1 beta Source HGNC Symbol Acc HGNC 5992
D08	SBH1220111	ENST00000401630.7	IL6	ENSG000000136244	interleukin 6 Source HGNC Symbol Acc HGNC 6018
D09	SBH0198962	ENST00000600492.1	INSR	ENSG000000171105	insulin receptor Source HGNC Symbol Acc HGNC 6091
D10	SBH0130188	ENST00000305123.5	IRS1	ENSG000000169047	insulin receptor substrate 1 Source HGNC Symbol Acc HGNC 6125
D11	SBH0324029	ENST00000558013.5	LDLR	ENSG000000130164	low density lipoprotein receptor Source HGNC Symbol Acc HGNC 6547
D12	SBH0111165	ENST00000349533.10	LEPR	ENSG000000116678	leptin receptor Source HGNC Symbol Acc HGNC 6554
E01	SBH1220175	ENST00000311322.10	LPL	ENSG000000175445	lipoprotein lipase Source HGNC Symbol Acc HGNC 6677
E02	SBH1220192	ENST00000544786.1	MAPK1	ENSG000000100030	mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871
E03	SBH0294318	ENST00000395611.7	MAPK8	ENSG000000107643	mitogen-activated protein kinase 8 Source HGNC Symbol Acc HGNC 6881
E04	SBH0379475	ENST00000476404.5	MLXIPL	ENSG000000009950	MLX interacting protein like Source HGNC Symbol Acc HGNC 12744
E05	SBH0492696	ENST00000361445.8	MTOR	ENSG000000198793	mechanistic target of rapamycin kinase Source HGNC Symbol Acc HGNC 3942
E06	SBH0232522	ENST00000350021.2	NDUFB6	ENSG000000165264	NADH ubiquinone oxidoreductase subunit B6 Source HGNC Symbol Acc HGNC 7701
E07	SBH1220264	ENST00000651197.1	NFKB1	ENSG000000109320	nuclear factor kappa B subunit 1 Source HGNC Symbol Acc HGNC 7794
E08	SBH0103207	ENST00000593532.5	NR1H2	ENSG000000131408	nuclear receptor subfamily 1 group H member 2 Source NCBI gene Acc 7376
E09	SBH0458854	ENST00000616973.4	NR1H3	ENSG000000025434	nuclear receptor subfamily 1 group H member 3 Source HGNC Symbol Acc HGNC 7966
E10	SBH0164181	ENST00000548884.5	NR1H4	ENSG000000012504	nuclear receptor subfamily 1 group H member 4 Source HGNC Symbol Acc HGNC 7967
E11	SBH0202599	ENST00000560736.5	PCK2	ENSG000000100889	phosphoenolpyruvate carboxykinase 2, mitochondrial Source HGNC Symbol Acc HGNC 8725
E12	SBH1220295	ENST00000005178.6	PK4	ENSG000000004799	pyruvate dehydrogenase kinase 4 Source HGNC Symbol Acc HGNC 8812
F01	SBH0121428	ENST00000462255.1	PIK3CA	ENSG000000121879	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Source HGNC Symbol Acc HGNC 8975
F02	SBH0560623	ENST00000518813.5	PIK3R1	ENSG000000145675	phosphoinositide-3-kinase regulatory subunit 1 Source HGNC Symbol Acc HGNC 8979
F03	SBH0144829	ENST00000342741.6	PKLR	ENSG000000143627	pyruvate kinase L/R Source HGNC Symbol Acc HGNC 9020
F04	SBH0123173	ENST00000216180.7	PNPLA3	ENSG000000100344	patatin like phospholipase domain containing 3 Source HGNC Symbol Acc HGNC 18590
F05	SBH1220320	ENST00000373232.8	PPA1	ENSG000000180817	pyrophosphatase (inorganic) 1 Source HGNC Symbol Acc HGNC 9226
F06	SBH1220322	ENST00000407236.5	PPARA	ENSG000000186951	peroxisome proliferator activated receptor alpha Source HGNC Symbol Acc HGNC 9232
F07	SBH0521265	ENST00000652522.1	PPARG	ENSG000000132170	peroxisome proliferator activated receptor gamma Source HGNC Symbol Acc HGNC 9236
F08	SBH0648879	ENST00000506055.5	PPARGC1A	ENSG000000109819	PPARG coactivator 1 alpha Source HGNC Symbol Acc HGNC 9237
F09	SBH1220332	ENST00000397128.6	PRKAA1	ENSG000000132356	protein kinase AMP-activated catalytic subunit alpha 1 Source HGNC Symbol Acc HGNC 9376
F10	SBH0048297	ENST00000541713.5	PTPN1	ENSG000000196396	protein tyrosine phosphatase, non-receptor type 1 Source HGNC Symbol Acc HGNC 9642

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH0091059	ENST00000371469.2	RBP4	ENSG00000138207	retinol binding protein 4 Source HGNC Symbol Acc HGNC 9922
F12	SBH0565802	ENST00000356384.4	RXRA	ENSG00000186350	retinoid X receptor alpha Source HGNC Symbol Acc HGNC 10477
G01	SBH0541153	ENST00000370355.3	SCD	ENSG00000099194	stearoyl-CoA desaturase Source HGNC Symbol Acc HGNC 10571
G02	SBH1220389	ENST00000223095.4	SERPINE1	ENSG00000106366	serpin family E member 1 Source HGNC Symbol Acc HGNC 8583
G03	SBH0355039	ENST00000263093.7	SLC27A5	ENSG00000083807	solute carrier family 27 member 5 Source HGNC Symbol Acc HGNC 10999
G04	SBH0102394	ENST00000426263.8	SLC2A1	ENSG00000117394	solute carrier family 2 member 1 Source HGNC Symbol Acc HGNC 11005
G05	SBH0303859	ENST00000471379.1	SLC2A2	ENSG00000163581	solute carrier family 2 member 2 Source HGNC Symbol Acc HGNC 11006
G06	SBH0509274	ENST00000424875.2	SLC2A4	ENSG00000181856	solute carrier family 2 member 4 Source HGNC Symbol Acc HGNC 11009
G07	SBH1220413	ENST00000330871.3	SOCS3	ENSG00000184557	suppressor of cytokine signaling 3 Source HGNC Symbol Acc HGNC 19391
G08	SBH0652491	ENST00000423161.3	SREBF1	ENSG00000072310	sterol regulatory element binding transcription factor 1 Source HGNC Symbol Acc HGNC 11289
G09	SBH0331510	ENST00000424354.5	SREBF2	ENSG00000198911	sterol regulatory element binding transcription factor 2 Source HGNC Symbol Acc HGNC 11290
G10	SBH0341614	ENST00000404395.3	STAT3	ENSG00000168610	signal transducer and activator of transcription 3 Source HGNC Symbol Acc HGNC 11364
G11	SBH1220471	ENST00000449264.3	TNF	ENSG00000232810	tumor necrosis factor Source HGNC Symbol Acc HGNC 11892
G12	SBH0036122	ENST00000403532.7	XBP1	ENSG00000100219	X-box binding protein 1 Source HGNC Symbol Acc HGNC 12801
H01	SBH1220543	ENST00000646664.1	ACTB	ENSG00000075624	actin beta Source HGNC Symbol Acc HGNC 132
H02	SBH1220550	ENST00000558401.6	B2M	ENSG00000166710	beta-2-microglobulin Source HGNC Symbol Acc HGNC 914
H03	SBH1220545	ENST00000396861.5	GAPDH	ENSG00000111640	glyceraldehyde-3-phosphate dehydrogenase Source HGNC Symbol Acc HGNC 4141
H04	SBH1220546	ENST00000298556.8	HPRT1	ENSG00000165704	hypoxanthine phosphoribosyltransferase 1 Source HGNC Symbol Acc HGNC 5157
H05	SBH1220553	ENST00000546989.5	RPLP0	ENSG00000089157	ribosomal protein lateral stalk subunit P0 Source HGNC Symbol Acc HGNC 10371
H06	SBH1218553	Sybr_HGDC	HGDC	Sybr_HGDC	Human 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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