

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

## Human Insulin Signaling Pathway

Cat. no. 249950 SBHS-030ZA

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	ACACA	ACOX1	ADRB3	AEBP1	AKT1	AKT2	AKT3	ANG	ARAF	BCL2L1	BRAF	CAP1
B	CBL	CEBPA	CEBPB	DOK1	DOK2	DOK3	DUSP14	EIF2B1	EIF4EBP1	ERCC1	FASN	FBP1
C	FOS	FRS2	FRS3	G6PC	GAB1	GCK	GPD1	GRB2	GSK3A	GSK3B	HK2	HRAS
D	IGF1R	IGF2	IGFBP1	INS	INSL3	INSR	IRS1	IRS2	IRS4	JUN	KRAS	LDLR
E	LEP	MAP2K1	MAPK1	MTOR	NCK1	NOS2	NPY	PCK2	PDPK1	PIK3CA	PIK3R1	PIK3R2
F	PKM	PPARG	PPP1CA	PRKCG	PRKCI	PRKCZ	PRL	PTPN1	PTPRF	RAF1	RETN	RPS6KA1
G	RRAS	RRAS2	SERPINE1	SHC1	SLC2A1	SLC2A4	SORBS1	SOS1	SREBF1	TG	UCP1	VEGFA
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	QIC	QIC	QIC	PPC	PPC	PPC

## Gene table: QuantiNova LNA PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	SBH0228804	ENST00000617649.4	ACACA	ENSG00000278540	acetyl-CoA carboxylase alpha Source HGNC Symbol Acc HGNC 84
A02	SBH0169326	ENST00000293217.10	ACOX1	ENSG00000161533	acyl-CoA oxidase 1 Source HGNC Symbol Acc HGNC 119
A03	SBH0064559	ENST00000345060.5	ADRB3	ENSG00000188778	adrenoceptor beta 3 Source HGNC Symbol Acc HGNC 288
A04	SBH0087280	ENST00000450684.2	AEBP1	ENSG00000106624	AE binding protein 1 Source HGNC Symbol Acc HGNC 303
A05	SBH0095396	ENST00000555528.5	AKT1	ENSG00000142208	AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391
A06	SBH0364428	ENST00000492463.6	AKT2	ENSG00000105221	AKT serine/threonine kinase 2 Source HGNC Symbol Acc HGNC 392
A07	SBH0031667	ENST00000463991.5	AKT3	ENSG00000117020	AKT serine/threonine kinase 3 Source HGNC Symbol Acc HGNC 393
A08	SBH0600967	ENST00000336811.10	ANG	ENSG00000214274	angiogenin Source HGNC Symbol Acc HGNC 483
A09	SBH0270663	ENST00000489496.1	ARAF	ENSG00000078061	A-Raf proto-oncogene, serine/threonine kinase Source HGNC Symbol Acc HGNC 646
A10	SBH0216029	ENST00000450273.1	BCL2L1	ENSG00000171552	BCL2 like 1 Source HGNC Symbol Acc HGNC 992
A11	SBH1219813	ENST00000288602.11	BRAF	ENSG00000157764	B-Raf proto-oncogene, serine/threonine kinase Source HGNC Symbol Acc HGNC 1097
A12	SBH0104613	ENST00000414893.5	CAP1	ENSG00000131236	cyclase associated actin cytoskeleton regulatory protein 1 Source HGNC Symbol Acc HGNC 20040
B01	SBH0174182	ENST00000634840.1	CBL	ENSG00000110395	Cbl proto-oncogene Source HGNC Symbol Acc HGNC 1541
B02	SBH0261466	ENST00000498907.3	CEBPA	ENSG00000245848	CCAAT enhancer binding protein alpha Source HGNC Symbol Acc HGNC 1833
B03	SBH0569983	ENST00000303004.4	CEBPB	ENSG00000172216	CCAAT enhancer binding protein beta Source HGNC Symbol Acc HGNC 1834
B04	SBH0527829	ENST00000464613.1	DOK1	ENSG00000115325	docking protein 1 Source HGNC Symbol Acc HGNC 2990
B05	SBH0228214	ENST00000518197.1	DOK2	ENSG00000147443	docking protein 2 Source HGNC Symbol Acc HGNC 2991
B06	SBH0137976	ENST00000510380.5	DOK3	ENSG00000146094	docking protein 3 Source HGNC Symbol Acc HGNC 24583
B07	SBH0095320	ENST00000614411.1	DUSP14	ENSG00000276023	dual specificity phosphatase 14 Source HGNC Symbol Acc HGNC 17007
B08	SBH0670667	ENST00000424014.6	EIF2B1	ENSG00000111361	eukaryotic translation initiation factor 2B subunit alpha Source HGNC Symbol Acc HGNC 3257
B09	SBH0094252	ENST00000338825.5	EIF4EBP1	ENSG00000187840	eukaryotic translation initiation factor 4E binding protein 1 Source HGNC Symbol Acc HGNC 3288
B10	SBH1219982	ENST00000300853.7	ERCC1	ENSG00000012061	ERCC excision repair 1, endonuclease non-catalytic subunit Source HGNC Symbol Acc HGNC 3433
B11	SBH0282662	ENST00000635197.1	FASN	ENSG00000169710	fatty acid synthase Source HGNC Symbol Acc HGNC 3594
B12	SBH0551904	ENST00000375326.8	FBP1	ENSG00000165140	fructose-bisphosphatase 1 Source HGNC Symbol Acc HGNC 3606
C01	SBH1220004	ENST00000554617.1	FOS	ENSG00000170345	Fos proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 3796
C02	SBH0331293	ENST00000550937.5	FRS2	ENSG00000166225	fibroblast growth factor receptor substrate 2 Source HGNC Symbol Acc HGNC 16971
C03	SBH0299593	ENST00000426290.1	FRS3	ENSG00000137218	fibroblast growth factor receptor substrate 3 Source HGNC Symbol Acc HGNC 16970
C04	SBH0049367	ENST00000592383.5	G6PC	ENSG00000131482	glucose-6-phosphatase catalytic subunit Source HGNC Symbol Acc HGNC 4056
C05	SBH0066881	ENST00000515366.5	GAB1	ENSG00000109458	GRB2 associated binding protein 1 Source HGNC Symbol Acc HGNC 4066
C06	SBH1220024	ENST00000616242.4	GCK	ENSG00000106633	glucokinase Source HGNC Symbol Acc HGNC 4195
C07	SBH0000085	ENST00000548152.1	GPD1	ENSG00000167588	glycerol-3-phosphate dehydrogenase 1 Source HGNC Symbol Acc HGNC 4455
C08	SBH1220038	ENST00000392563.5	GRB2	ENSG00000177885	growth factor receptor bound protein 2 Source HGNC Symbol Acc HGNC 4566
C09	SBH1220041	ENST00000222330.8	GSK3A	ENSG00000105723	glycogen synthase kinase 3 alpha Source HGNC Symbol Acc HGNC 4616
C10	SBH0579883	ENST00000316626.5	GSK3B	ENSG00000082701	glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617
		ENST00000290		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0186371	573.6	HK2	159399	hexokinase 2 Source HGNC Symbol Acc HGNC 4923
C12	SBH0257285	ENST00000493230.5	HRAS	ENSG00000174775	HRas proto-oncogene, GTPase Source HGNC Symbol Acc HGNC 5173
D01	SBH0201042	ENST00000650285.1	IGF1R	ENSG00000140443	insulin like growth factor 1 receptor Source HGNC Symbol Acc HGNC 5465
D02	SBH0264962	ENST00000418738.2	IGF2	ENSG00000167244	insulin like growth factor 2 Source HGNC Symbol Acc HGNC 5466
D03	SBH0586817	ENST00000468955.1	IGFBP1	ENSG00000146678	insulin like growth factor binding protein 1 Source HGNC Symbol Acc HGNC 5469
D04	SBH0403664	ENST00000250971.7	INS	ENSG00000254647	insulin Source HGNC Symbol Acc HGNC 6081
D05	SBH0379580	ENST00000317306.8	INSL3	ENSG00000248099	insulin like 3 Source HGNC Symbol Acc HGNC 6086
D06	SBH0198962	ENST00000600492.1	INSR	ENSG00000171105	insulin receptor Source HGNC Symbol Acc HGNC 6091
D07	SBH0130188	ENST00000305123.5	IRS1	ENSG00000169047	insulin receptor substrate 1 Source HGNC Symbol Acc HGNC 6125
D08	SBH0069279	ENST00000375856.5	IRS2	ENSG00000185950	insulin receptor substrate 2 Source HGNC Symbol Acc HGNC 6126
D09	SBH0536565	ENST00000372129.3	IRS4	ENSG00000133124	insulin receptor substrate 4 Source HGNC Symbol Acc HGNC 6128
D10	SBH0613340	ENST00000371222.3	JUN	ENSG00000177606	Jun proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 6204
D11	SBH0300474	ENST00000556131.1	KRAS	ENSG00000133703	KRAS proto-oncogene, GTPase Source HGNC Symbol Acc HGNC 6407
D12	SBH0324029	ENST00000558013.5	LDLR	ENSG00000130164	low density lipoprotein receptor Source HGNC Symbol Acc HGNC 6547
E01	SBH1220169	ENST00000308868.5	LEP	ENSG00000174697	leptin Source HGNC Symbol Acc HGNC 6553
E02	SBH0671782	ENST00000307102.9	MAP2K1	ENSG00000169032	mitogen-activated protein kinase kinase 1 Source HGNC Symbol Acc HGNC 6840
E03	SBH1220192	ENST00000544786.1	MAPK1	ENSG00000100030	mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871
E04	SBH0492696	ENST00000361445.8	MTOR	ENSG00000198793	mechanistic target of rapamycin kinase Source HGNC Symbol Acc HGNC 3942
E05	SBH0524718	ENST00000485096.5	NCK1	ENSG00000158092	NCK adaptor protein 1 Source HGNC Symbol Acc HGNC 7664
E06	SBH0408796	ENST00000313735.10	NOS2	ENSG00000007171	nitric oxide synthase 2 Source HGNC Symbol Acc HGNC 7873
E07	SBH0377787	ENST00000407573.5	NPY	ENSG00000122585	neuropeptide Y Source HGNC Symbol Acc HGNC 7955
E08	SBH0202599	ENST00000560736.5	PCK2	ENSG00000100889	phosphoenolpyruvate carboxykinase 2, mitochondrial Source HGNC Symbol Acc HGNC 8725
E09	SBH0257483	ENST00000441549.7	PDPK1	ENSG00000140992	3-phosphoinositide dependent protein kinase 1 Source HGNC Symbol Acc HGNC 8816
E10	SBH0121428	ENST00000462255.1	PIK3CA	ENSG00000121879	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Source HGNC Symbol Acc HGNC 8975
E11	SBH0560623	ENST00000518813.5	PIK3R1	ENSG00000145675	phosphoinositide-3-kinase regulatory subunit 1 Source HGNC Symbol Acc HGNC 8979
E12	SBH0626073	ENST00000617130.4	PIK3R2	ENSG00000105647	phosphoinositide-3-kinase regulatory subunit 2 Source HGNC Symbol Acc HGNC 8980
F01	SBH0365786	ENST00000568883.5	PKM	ENSG00000067225	pyruvate kinase M1/2 Source HGNC Symbol Acc HGNC 9021
F02	SBH0521265	ENST00000652522.1	PPARG	ENSG00000132170	peroxisome proliferator activated receptor gamma Source HGNC Symbol Acc HGNC 9236
F03	SBH0657387	ENST00000532446.5	PPP1CA	ENSG00000172531	protein phosphatase 1 catalytic subunit alpha Source HGNC Symbol Acc HGNC 9281
F04	SBH0670634	ENST00000419486.1	PRKCG	ENSG00000126583	protein kinase C gamma Source HGNC Symbol Acc HGNC 9402
F05	SBH0105783	ENST00000295797.5	PRKCI	ENSG00000163558	protein kinase C iota Source HGNC Symbol Acc HGNC 9404
F06	SBH1220333	ENST00000470596.5	PRKCZ	ENSG00000067606	protein kinase C zeta Source HGNC Symbol Acc HGNC 9412
F07	SBH0553464	ENST00000615510.4	PRL	ENSG00000172179	prolactin Source HGNC Symbol Acc HGNC 9445
F08	SBH0048297	ENST00000541713.5	PTPN1	ENSG00000196396	protein tyrosine phosphatase, non-receptor type 1 Source HGNC Symbol Acc HGNC 9642
F09	SBH0573585	ENST00000481019.5	PTPRF	ENSG00000142949	protein tyrosine phosphatase, receptor type F Source HGNC Symbol Acc HGNC 9670
F10	SBH0573752	ENST00000416093.1	RAF1	ENSG00000132155	Raf-1 proto-oncogene, serine/threonine kinase Source HGNC Symbol Acc HGNC 9829

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH0623598	ENST00000629642.1	RETN	ENSG00000104918	resistin Source HGNC Symbol Acc HGNC 20389
F12	SBH0278599	ENST00000530607.1	RPS6KA1	ENSG00000117676	ribosomal protein S6 kinase A1 Source HGNC Symbol Acc HGNC 10430
G01	SBH0604570	ENST00000601532.1	RRAS	ENSG00000126458	RAS related Source HGNC Symbol Acc HGNC 10447
G02	SBH0618410	ENST00000256196.9	RRAS2	ENSG00000133818	RAS related 2 Source HGNC Symbol Acc HGNC 17271
G03	SBH1220389	ENST00000223095.4	SERPINE1	ENSG00000106366	serpin family E member 1 Source HGNC Symbol Acc HGNC 8583
G04	SBH0510346	ENST00000368450.5	SHC1	ENSG00000160691	SHC adaptor protein 1 Source HGNC Symbol Acc HGNC 10840
G05	SBH0102394	ENST00000426263.8	SLC2A1	ENSG00000117394	solute carrier family 2 member 1 Source HGNC Symbol Acc HGNC 11005
G06	SBH0509274	ENST00000424875.2	SLC2A4	ENSG00000181856	solute carrier family 2 member 4 Source HGNC Symbol Acc HGNC 11009
G07	SBH0605702	ENST00000371241.5	SORBS1	ENSG00000095637	sorbin and SH3 domain containing 1 Source HGNC Symbol Acc HGNC 14565
G08	SBH0363804	ENST00000426016.5	SOS1	ENSG00000115904	SOS Ras/Rac guanine nucleotide exchange factor 1 Source HGNC Symbol Acc HGNC 11187
G09	SBH0652491	ENST00000423161.3	SREBF1	ENSG00000072310	sterol regulatory element binding transcription factor 1 Source HGNC Symbol Acc HGNC 11289
G10	SBH0209276	ENST00000523756.5	TG	ENSG00000042832	thyroglobulin Source HGNC Symbol Acc HGNC 11764
G11	SBH0666067	ENST00000262999.4	UCP1	ENSG00000109424	uncoupling protein 1 Source HGNC Symbol Acc HGNC 12517
G12	SBH0420322	ENST00000425836.6	VEGFA	ENSG00000112715	vascular endothelial growth factor A Source HGNC Symbol Acc HGNC 12680
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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