

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

## Human PI3K-AKT Signaling Pathway

Cat. no. 249950 SBHS-058ZA

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	ADAR	AKT1	AKT2	AKT3	APC	BAD	BTk	CASP9	CCND1	CD14	CDC42	CDKN1B
B	CHUK	CSNK2A1	CTNNB1	EIF2AK2	EIF4B	EIF4E	EIF4EBP1	EIF4G1	ELK1	FASLG	FKBP1A	FOS
C	FOXO1	FOXO3	GJA1	GRB10	GRB2	GSK3B	HRAS	HSPB1	IGF1	IGF1R	ILK	IRAK1
D	IRS1	ITGB1	JUN	MAP2K1	MAPK1	MAPK14	MAPK3	MAPK8	MTCP1	MTOR	MYD88	NFKB1
E	NFKBIA	PABPC1	PAK1	PDGFRA	PDK1	PDK2	PDPK1	PIK3CA	PIK3CG	PIK3R1	PIK3R2	PRKCA
F	PRKCB	PRKCZ	PTEN	PTK2	PTPN11	RAC1	RAF1	RASA1	RBL2	RHEB	RHOA	RPS6KA1
G	RPS6KB1	SHC1	SOS1	SRF	TCL1A	TIRAP	TLR4	TOLLIP	TSC1	TSC2	WASL	YWHAH
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	SBH0422508	ENST00000647597.1	ADAR	ENSG00000160710	adenosine deaminase, RNA specific Source HGNC Symbol Acc HGNC 225
A02	SBH0095396	ENST00000555528.5	AKT1	ENSG00000142208	AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391
A03	SBH0364428	ENST00000492463.6	AKT2	ENSG00000105221	AKT serine/threonine kinase 2 Source HGNC Symbol Acc HGNC 392
A04	SBH0031667	ENST00000463991.5	AKT3	ENSG00000117020	AKT serine/threonine kinase 3 Source HGNC Symbol Acc HGNC 393
A05	SBH1219746	ENST00000512211.6	APC	ENSG00000134982	APC, WNT signaling pathway regulator Source HGNC Symbol Acc HGNC 583
A06	SBH0034205	ENST00000394532.7	BAD	ENSG00000002330	BCL2 associated agonist of cell death Source HGNC Symbol Acc HGNC 936
A07	SBH0014638	ENST00000308731.7	BTK	ENSG000000101671	Bruton tyrosine kinase Source HGNC Symbol Acc HGNC 1133
A08	SBH1219828	ENST00000333868.10	CASP9	ENSG000000132906	caspase 9 Source HGNC Symbol Acc HGNC 1511
A09	SBH0434090	ENST00000227507.2	CCND1	ENSG000000110092	cyclin D1 Source HGNC Symbol Acc HGNC 1582
A10	SBH1219857	ENST00000512545.1	CD14	ENSG000000170458	CD14 molecule Source HGNC Symbol Acc HGNC 1628
A11	SBH0651826	ENST00000651171.1	CDC42	ENSG000000070831	cell division cycle 42 Source HGNC Symbol Acc HGNC 1736
A12	SBH1219879	ENST00000442489.1	CDKN1B	ENSG000000111276	cyclin dependent kinase inhibitor 1B Source HGNC Symbol Acc HGNC 1785
B01	SBH1219887	ENST00000370397.8	CHUK	ENSG000000213341	conserved helix-loop-helix ubiquitous kinase Source HGNC Symbol Acc HGNC 1974
B02	SBH1219915	ENST00000645187.1	CSNK2A1	ENSG000000101266	casein kinase 2 alpha 1 Source HGNC Symbol Acc HGNC 2457
B03	SBH0588482	ENST00000396183.7	CTNNB1	ENSG000000168036	catenin beta 1 Source HGNC Symbol Acc HGNC 2514
B04	SBH1219971	ENST00000233057.9	EIF2AK2	ENSG000000055332	eukaryotic translation initiation factor 2 alpha kinase 2 Source HGNC Symbol Acc HGNC 9437
B05	SBH0328103	ENST00000549077.5	EIF4B	ENSG000000063046	eukaryotic translation initiation factor 4B Source HGNC Symbol Acc HGNC 3285
B06	SBH0565938	ENST00000505992.1	EIF4E	ENSG000000151247	eukaryotic translation initiation factor 4E Source HGNC Symbol Acc HGNC 3287
B07	SBH0094252	ENST00000338825.5	EIF4EBP1	ENSG000000187840	eukaryotic translation initiation factor 4E binding protein 1 Source HGNC Symbol Acc HGNC 3288
B08	SBH0065181	ENST00000382330.7	EIF4G1	ENSG000000114867	eukaryotic translation initiation factor 4 gamma 1 Source HGNC Symbol Acc HGNC 3296
B09	SBH1219973	ENST00000376983.8	ELK1	ENSG000000126767	ELK1, ETS transcription factor Source HGNC Symbol Acc HGNC 3321
B10	SBH1219995	ENST00000367721.3	FASLG	ENSG000000117560	Fas ligand Source HGNC Symbol Acc HGNC 11936
B11	SBH0509806	ENST00000474657.5	FKBP1A	ENSG000000088832	FKBP prolyl isomerase 1A Source HGNC Symbol Acc HGNC 3711
B12	SBH1220004	ENST00000554617.1	FOS	ENSG000000170345	Fos proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 3796
C01	SBH0594989	ENST00000379561.6	FOXO1	ENSG000000150907	forkhead box O1 Source HGNC Symbol Acc HGNC 3819
C02	SBH0089051	ENST00000406360.2	FOXO3	ENSG000000118689	forkhead box O3 Source HGNC Symbol Acc HGNC 3821
C03	SBH0022905	ENST00000282561.4	GJA1	ENSG000000152661	gap junction protein alpha 1 Source HGNC Symbol Acc HGNC 4274
C04	SBH0479440	ENST00000401949.6	GRB10	ENSG000000106070	growth factor receptor bound protein 10 Source HGNC Symbol Acc HGNC 4564
C05	SBH1220038	ENST00000392563.5	GRB2	ENSG000000177885	growth factor receptor bound protein 2 Source HGNC Symbol Acc HGNC 4566
C06	SBH0579883	ENST00000316626.5	GSK3B	ENSG000000082701	glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617
C07	SBH0257285	ENST00000493230.5	HRAS	ENSG000000174775	HRas proto-oncogene, GTPase Source HGNC Symbol Acc HGNC 5173
C08	SBH0474094	ENST00000429938.1	HSPB1	ENSG000000106211	heat shock protein family B (small) member 1 Source HGNC Symbol Acc HGNC 5246
C09	SBH1220091	ENST00000337514.10	IGF1	ENSG000000017427	insulin like growth factor 1 Source HGNC Symbol Acc HGNC 5464
C10	SBH0201042	ENST00000650285.1	IGF1R	ENSG000000140443	insulin like growth factor 1 receptor Source HGNC Symbol Acc HGNC 5465
		ENST00000299		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0381135	421.8	ILK	166333	integrin linked kinase Source HGNC Symbol Acc HGNC 6040
C12	SBH1220119	ENST00000393687.6	IRAK1	ENSG00000184216	interleukin 1 receptor associated kinase 1 Source HGNC Symbol Acc HGNC 6112
D01	SBH0130188	ENST00000305123.5	IRS1	ENSG00000169047	insulin receptor substrate 1 Source HGNC Symbol Acc HGNC 6125
D02	SBH1220136	ENST00000302278.8	ITGB1	ENSG00000150093	integrin subunit beta 1 Source HGNC Symbol Acc HGNC 6153
D03	SBH0613340	ENST00000371222.3	JUN	ENSG00000177606	Jun proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 6204
D04	SBH0671782	ENST00000307102.9	MAP2K1	ENSG00000169032	mitogen-activated protein kinase kinase 1 Source HGNC Symbol Acc HGNC 6840
D05	SBH1220192	ENST00000544786.1	MAPK1	ENSG00000100030	mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871
D06	SBH0102441	ENST00000229795.7	MAPK14	ENSG00000112062	mitogen-activated protein kinase 14 Source HGNC Symbol Acc HGNC 6876
D07	SBH1220194	ENST00000478356.5	MAPK3	ENSG00000102882	mitogen-activated protein kinase 3 Source HGNC Symbol Acc HGNC 6877
D08	SBH0294318	ENST00000395611.7	MAPK8	ENSG00000107643	mitogen-activated protein kinase 8 Source HGNC Symbol Acc HGNC 6881
D09	SBH0448036	ENST00000369476.8	MTCP1	ENSG00000214827	mature T cell proliferation 1 Source HGNC Symbol Acc HGNC 7423
D10	SBH0492696	ENST00000361445.8	MTOR	ENSG00000198793	mechanistic target of rapamycin kinase Source HGNC Symbol Acc HGNC 3942
D11	SBH0303234	ENST00000648963.1	MYD88	ENSG00000172936	MYD88, innate immune signal transduction adaptor Source HGNC Symbol Acc HGNC 7562
D12	SBH1220264	ENST00000651197.1	NFKB1	ENSG00000109320	nuclear factor kappa B subunit 1 Source HGNC Symbol Acc HGNC 7794
E01	SBH0552847	ENST00000216797.9	NFKBIA	ENSG00000100906	NFKB inhibitor alpha Source HGNC Symbol Acc HGNC 7797
E02	SBH0669980	ENST00000517403.5	PABPC1	ENSG00000070756	poly(A) binding protein cytoplasmic 1 Source HGNC Symbol Acc HGNC 8554
E03	SBH0221748	ENST00000356341.7	PAK1	ENSG00000149269	p21 (RAC1) activated kinase 1 Source HGNC Symbol Acc HGNC 8590
E04	SBH1220292	ENST00000257290.10	PDGFRA	ENSG00000134853	platelet derived growth factor receptor alpha Source HGNC Symbol Acc HGNC 8803
E05	SBH0017980	ENST00000410055.5	PDK1	ENSG00000152256	pyruvate dehydrogenase kinase 1 Source HGNC Symbol Acc HGNC 8809
E06	SBH0253705	ENST00000503176.5	PDK2	ENSG00000005882	pyruvate dehydrogenase kinase 2 Source HGNC Symbol Acc HGNC 8810
E07	SBH0257483	ENST00000441549.7	PDPK1	ENSG00000140992	3-phosphoinositide dependent protein kinase 1 Source HGNC Symbol Acc HGNC 8816
E08	SBH0121428	ENST00000462255.1	PIK3CA	ENSG00000121879	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Source HGNC Symbol Acc HGNC 8975
E09	SBH1220313	ENST00000496166.6	PIK3CG	ENSG00000105851	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma Source HGNC Symbol Acc HGNC 8978
E10	SBH0560623	ENST00000518813.5	PIK3R1	ENSG00000145675	phosphoinositide-3-kinase regulatory subunit 1 Source HGNC Symbol Acc HGNC 8979
E11	SBH0626073	ENST00000617130.4	PIK3R2	ENSG00000105647	phosphoinositide-3-kinase regulatory subunit 2 Source HGNC Symbol Acc HGNC 8980
E12	SBH0105563	ENST00000578063.5	PRKCA	ENSG00000154229	protein kinase C alpha Source HGNC Symbol Acc HGNC 9393
F01	SBH0521170	ENST00000472066.1	PRKCB	ENSG00000166501	protein kinase C beta Source HGNC Symbol Acc HGNC 9395
F02	SBH1220333	ENST00000470596.5	PRK CZ	ENSG00000067606	protein kinase C zeta Source HGNC Symbol Acc HGNC 9412
F03	SBH1225378	ENST00000371953.8	PTEN	ENSG00000171862	phosphatase and tensin homolog Source HGNC Symbol Acc HGNC 9588
F04	SBH1220345	ENST00000523539.5	PTK2	ENSG00000169398	protein tyrosine kinase 2 Source HGNC Symbol Acc HGNC 9611
F05	SBH0531473	ENST00000392597.5	PTPN11	ENSG00000179295	protein tyrosine phosphatase, non-receptor type 11 Source HGNC Symbol Acc HGNC 9644
F06	SBH1220352	ENST00000356142.4	RAC1	ENSG00000136238	Rac family small GTPase 1 Source HGNC Symbol Acc HGNC 9801
F07	SBH0573752	ENST00000416093.1	RAF1	ENSG00000132155	Raf-1 proto-oncogene, serine/threonine kinase Source HGNC Symbol Acc HGNC 9829
F08	SBH0438896	ENST00000456692.6	RASA1	ENSG00000145715	RAS p21 protein activator 1 Source HGNC Symbol Acc HGNC 9871
F09	SBH1220361	ENST00000262133.11	RBL2	ENSG00000103479	RB transcriptional corepressor like 2 Source HGNC Symbol Acc HGNC 9894
F10	SBH0210154	ENST00000478470.5	RHEB	ENSG00000106615	Ras homolog, mTORC1 binding Source HGNC Symbol Acc HGNC 10011

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH1220367	ENST00000418115.6	RHOA	ENSG00000067560	ras homolog family member A Source HGNC Symbol Acc HGNC 667
F12	SBH0278599	ENST00000530607.1	RPS6KA1	ENSG00000117676	ribosomal protein S6 kinase A1 Source HGNC Symbol Acc HGNC 10430
G01	SBH1220379	ENST00000406116.7	RPS6KB1	ENSG00000108443	ribosomal protein S6 kinase B1 Source HGNC Symbol Acc HGNC 10436
G02	SBH0510346	ENST00000368450.5	SHC1	ENSG00000160691	SHC adaptor protein 1 Source HGNC Symbol Acc HGNC 10840
G03	SBH0363804	ENST00000426016.5	SOS1	ENSG00000115904	SOS Ras/Rac guanine nucleotide exchange factor 1 Source HGNC Symbol Acc HGNC 11187
G04	SBH0145486	ENST00000265354.6	SRF	ENSG00000112658	serum response factor Source HGNC Symbol Acc HGNC 11291
G05	SBH0009557	ENST00000556450.5	TCL1A	ENSG00000100721	T cell leukemia/lymphoma 1A Source NCBI gene Acc 8115
G06	SBH0413608	ENST00000392680.6	TIRAP	ENSG00000150455	TIR domain containing adaptor protein Source HGNC Symbol Acc HGNC 17192
G07	SBH0092782	ENST00000355622.8	TLR4	ENSG00000136869	toll like receptor 4 Source HGNC Symbol Acc HGNC 11850
G08	SBH1220484	ENST00000530541.1	TOLLIP	ENSG00000078902	toll interacting protein Source HGNC Symbol Acc HGNC 16476
G09	SBH0061747	ENST00000647506.1	TSC1	ENSG00000165699	TSC complex subunit 1 Source HGNC Symbol Acc HGNC 12362
G10	SBH0580963	ENST00000644399.1	TSC2	ENSG00000103197	TSC complex subunit 2 Source HGNC Symbol Acc HGNC 12363
G11	SBH0637755	ENST00000223023.5	WASL	ENSG00000106299	Wiskott-Aldrich syndrome like Source HGNC Symbol Acc HGNC 12735
G12	SBH0348049	ENST00000397492.1	YWHAH	ENSG00000128245	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein eta Source HGNC Symbol Acc HGNC 12853
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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