

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

## Human p53 Signaling Pathway

Cat. no. 249950 SBHS-027ZA

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	APAF1	ATM	ATR	ADGRB1	BAX	BBC3	BCL2	BCL2A1	BID	BIRC5	BRCA1	BRCA2
B	BTG2	CASP2	CASP9	CCNB1	CCNE1	CCNG1	CCNH	CDC25A	CDC25C	CDK1	CDK4	CDKN1A
C	CDKN2A	CHEK1	CHEK2	CRADD	DNMT1	E2F1	E2F3	EGFR	EGR1	EI24	ESR1	FADD
D	FAS	FASLG	FOXO3	GADD45A	GML	HDAC1	HK2	IGF1R	IL6	JUN	KAT2B	KRAS
E	MCL1	MDM2	MDM4	MLH1	MSH2	MYC	MYOD1	NF1	NFKB1	PCNA	PIDD1	PPM1D
F	PRC1	PRKCA	PTEN	PTTG1	RB1	RELA	RPRM	SESN2	SHAH1	SIRT1	STAT1	TADA3
G	TNF	TNFRSF10B	TNFRSF10D	TP53	TP53AIP1	TP53BP2	TP63	TP73	TRAF2	TSC1	WT1	XRCC5
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	SBH1219745	ENST00000359972.6	APAF1	ENSG00000120868	apoptotic peptidase activating factor 1 Source HGNC Symbol Acc HGNC 576
A02	SBH1219763	ENST00000452508.6	ATM	ENSG00000149311	ATM serine/threonine kinase Source HGNC Symbol Acc HGNC 795
A03	SBH1219775	ENST00000350721.9	ATR	ENSG00000175054	ATR serine/threonine kinase Source HGNC Symbol Acc HGNC 882
A04	SBH0575720	ENST00000323289.6	ADGRB1	ENSG00000181790	adhesion G protein-coupled receptor B1 Source HGNC Symbol Acc HGNC 943
A05	SBH1219783	ENST00000391871.4	BAX	ENSG00000087088	BCL2 associated X, apoptosis regulator Source HGNC Symbol Acc HGNC 959
A06	SBH1219784	ENST00000341983.8	BBC3	ENSG00000105327	BCL2 binding component 3 Source HGNC Symbol Acc HGNC 17868
A07	SBH1219786	ENST00000398117.1	BCL2	ENSG00000171791	BCL2, apoptosis regulator Source HGNC Symbol Acc HGNC 990
A08	SBH1219787	ENST00000267953.4	BCL2A1	ENSG00000140379	BCL2 related protein A1 Source HGNC Symbol Acc HGNC 991
A09	SBH0641141	ENST00000622694.4	BID	ENSG00000015475	BH3 interacting domain death agonist Source HGNC Symbol Acc HGNC 1050
A10	SBH1219797	ENST00000301633.8	BIRC5	ENSG00000089685	baculoviral IAP repeat containing 5 Source HGNC Symbol Acc HGNC 593
A11	SBH1219814	ENST00000357654.8	BRCA1	ENSG00000012048	BRCA1, DNA repair associated Source HGNC Symbol Acc HGNC 1100
A12	SBH1219815	ENST00000380152.7	BRCA2	ENSG00000139618	BRCA2, DNA repair associated Source HGNC Symbol Acc HGNC 1101
B01	SBH1219818	ENST00000290551.5	BTG2	ENSG00000159388	BTG anti-proliferation factor 2 Source HGNC Symbol Acc HGNC 1131
B02	SBH0250948	ENST00000310447.10	CASP2	ENSG00000106144	caspase 2 Source HGNC Symbol Acc HGNC 1503
B03	SBH1219828	ENST00000333868.10	CASP9	ENSG00000132906	caspase 9 Source HGNC Symbol Acc HGNC 1511
B04	SBH1219842	ENST00000256442.10	CCNB1	ENSG00000134057	cyclin B1 Source HGNC Symbol Acc HGNC 1579
B05	SBH1219846	ENST00000262643.8	CCNE1	ENSG00000105173	cyclin E1 Source HGNC Symbol Acc HGNC 1589
B06	SBH1219847	ENST00000393929.5	CCNG1	ENSG00000113328	cyclin G1 Source HGNC Symbol Acc HGNC 1592
B07	SBH1219849	ENST00000504878.1	CCNH	ENSG00000134480	cyclin H Source HGNC Symbol Acc HGNC 1594
B08	SBH0437013	ENST00000302506.7	CDC25A	ENSG00000164045	cell division cycle 25A Source HGNC Symbol Acc HGNC 1725
B09	SBH1219866	ENST00000514017.1	CDC25C	ENSG00000158402	cell division cycle 25C Source HGNC Symbol Acc HGNC 1727
B10	SBH0229893	ENST00000395284.7	CDK1	ENSG00000170312	cyclin dependent kinase 1 Source HGNC Symbol Acc HGNC 1722
B11	SBH1219873	ENST00000547281.5	CDK4	ENSG00000135446	cyclin dependent kinase 4 Source HGNC Symbol Acc HGNC 1773
B12	SBH0608500	ENST00000244741.9	CDKN1A	ENSG00000124762	cyclin dependent kinase inhibitor 1A Source HGNC Symbol Acc HGNC 1784
C01	SBH0349548	ENST00000304494.9	CDKN2A	ENSG00000147889	cyclin dependent kinase inhibitor 2A Source HGNC Symbol Acc HGNC 1787
C02	SBH1219885	ENST00000534070.5	CHEK1	ENSG00000149554	checkpoint kinase 1 Source HGNC Symbol Acc HGNC 1925
C03	SBH0661120	ENST00000416671.5	CHEK2	ENSG00000183765	checkpoint kinase 2 Source HGNC Symbol Acc HGNC 16627
C04	SBH1219911	ENST00000552983.5	CRADD	ENSG00000169372	CASP2 and RIPK1 domain containing adaptor with death domain Source HGNC Symbol Acc HGNC 2340
C05	SBH0209142	ENST00000340748.8	DNMT1	ENSG00000130816	DNA methyltransferase 1 Source HGNC Symbol Acc HGNC 2976
C06	SBH1219965	ENST00000343380.6	E2F1	ENSG00000101412	E2F transcription factor 1 Source HGNC Symbol Acc HGNC 3113
C07	SBH0417454	ENST00000535432.2	E2F3	ENSG00000112242	E2F transcription factor 3 Source HGNC Symbol Acc HGNC 3115
C08	SBH1219970	ENST00000454757.6	EGFR	ENSG00000146648	epidermal growth factor receptor Source HGNC Symbol Acc HGNC 3236
C09	SBH0290504	ENST00000239938.5	EGR1	ENSG00000120738	early growth response 1 Source HGNC Symbol Acc HGNC 3238
C10	SBH0209807	ENST00000529765.5	EI24	ENSG00000149547	EI24, autophagy associated transmembrane protein Source HGNC Symbol Acc HGNC 13276
		ENST00000206		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0125383	249.7	ESR1	091831	estrogen receptor 1 Source HGNC Symbol Acc HGNC 3467
C12	SBH0294674	ENST00000301838.4	FADD	ENSG00000168040	Fas associated via death domain Source HGNC Symbol Acc HGNC 3573
D01	SBH1219994	ENST00000652046.1	FAS	ENSG00000026103	Fas cell surface death receptor Source HGNC Symbol Acc HGNC 11920
D02	SBH1219995	ENST00000367721.3	FASLG	ENSG00000117560	Fas ligand Source HGNC Symbol Acc HGNC 11936
D03	SBH0089051	ENST00000406360.2	FOXO3	ENSG00000118689	forkhead box O3 Source HGNC Symbol Acc HGNC 3821
D04	SBH1220019	ENST00000370985.4	GADD45A	ENSG00000116717	growth arrest and DNA damage inducible alpha Source HGNC Symbol Acc HGNC 4095
D05	SBH0087552	ENST00000220940.1	GML	ENSG00000104499	glycosylphosphatidylinositol anchored molecule like Source HGNC Symbol Acc HGNC 4375
D06	SBH0527067	ENST00000472928.5	HDAC1	ENSG00000116478	histone deacetylase 1 Source HGNC Symbol Acc HGNC 4852
D07	SBH0186371	ENST00000290573.6	HK2	ENSG00000159399	hexokinase 2 Source HGNC Symbol Acc HGNC 4923
D08	SBH0201042	ENST00000650285.1	IGF1R	ENSG00000140443	insulin like growth factor 1 receptor Source HGNC Symbol Acc HGNC 5465
D09	SBH1220111	ENST00000401630.7	IL6	ENSG00000136244	interleukin 6 Source HGNC Symbol Acc HGNC 6018
D10	SBH0613340	ENST00000371222.3	JUN	ENSG00000177606	Jun proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 6204
D11	SBH1220145	ENST00000263754.5	KAT2B	ENSG00000114166	lysine acetyltransferase 2B Source HGNC Symbol Acc HGNC 8638
D12	SBH0300474	ENST00000556131.1	KRAS	ENSG00000133703	KRAS proto-oncogene, GTPase Source HGNC Symbol Acc HGNC 6407
E01	SBH1220199	ENST00000620947.4	MCL1	ENSG00000143384	MCL1, BCL2 family apoptosis regulator Source HGNC Symbol Acc HGNC 6943
E02	SBH1220207	ENST00000523991.5	MDM2	ENSG00000135679	MDM2 proto-oncogene Source HGNC Symbol Acc HGNC 6973
E03	SBH0425522	ENST00000463049.5	MDM4	ENSG00000198625	MDM4, p53 regulator Source HGNC Symbol Acc HGNC 6974
E04	SBH0236577	ENST00000231790.6	MLH1	ENSG00000076242	mutL homolog 1 Source HGNC Symbol Acc HGNC 7127
E05	SBH1220228	ENST00000233146.6	MSH2	ENSG00000095002	mutS homolog 2 Source HGNC Symbol Acc HGNC 7325
E06	SBH0426145	ENST00000524013.1	MYC	ENSG00000136997	MYC proto-oncogene, bHLH transcription factor Source HGNC Symbol Acc HGNC 7553
E07	SBH0342665	ENST00000250003.4	MYOD1	ENSG00000129152	myogenic differentiation 1 Source HGNC Symbol Acc HGNC 7611
E08	SBH0472829	ENST00000358273.8	NF1	ENSG00000196712	neurofibromin 1 Source HGNC Symbol Acc HGNC 7765
E09	SBH1220264	ENST00000651197.1	NFKB1	ENSG00000109320	nuclear factor kappa B subunit 1 Source HGNC Symbol Acc HGNC 7794
E10	SBH0251688	ENST00000379160.3	PCNA	ENSG00000132646	proliferating cell nuclear antigen Source HGNC Symbol Acc HGNC 8729
E11	SBH0534398	ENST00000411829.6	PIDD1	ENSG00000177595	p53-induced death domain protein 1 Source HGNC Symbol Acc HGNC 16491
E12	SBH1220325	ENST00000305921.7	PPM1D	ENSG00000170836	protein phosphatase, Mg2+/Mn2+ dependent 1D Source HGNC Symbol Acc HGNC 9277
F01	SBH0432704	ENST00000555745.5	PRC1	ENSG00000198901	protein regulator of cytokinesis 1 Source HGNC Symbol Acc HGNC 9341
F02	SBH0105563	ENST00000578063.5	PRKCA	ENSG00000154229	protein kinase C alpha Source HGNC Symbol Acc HGNC 9393
F03	SBH1225378	ENST00000371953.8	PTEN	ENSG00000171862	phosphatase and tensin homolog Source HGNC Symbol Acc HGNC 9588
F04	SBH0325443	ENST00000517480.1	PTTG1	ENSG00000164611	pituitary tumor-transforming 1 Source HGNC Symbol Acc HGNC 9690
F05	SBH0093533	ENST00000267163.5	RB1	ENSG00000139687	RB transcriptional corepressor 1 Source HGNC Symbol Acc HGNC 9884
F06	SBH1220363	ENST00000532999.5	RELA	ENSG00000173039	RELA proto-oncogene, NF-kB subunit Source HGNC Symbol Acc HGNC 9955
F07	SBH0037020	ENST00000325926.4	RPRM	ENSG00000177519	reprimin, TP53 dependent G2 arrest mediator homolog Source HGNC Symbol Acc HGNC 24201
F08	SBH0059061	ENST00000253063.4	SESN2	ENSG00000130766	sestrin 2 Source HGNC Symbol Acc HGNC 20746
F09	SBH0233801	ENST00000567973.1	SIAH1	ENSG00000196470	siah E3 ubiquitin protein ligase 1 Source HGNC Symbol Acc HGNC 10857
F10	SBH1220398	ENST00000212015.11	SIRT1	ENSG00000096717	sirtuin 1 Source HGNC Symbol Acc HGNC 14929

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH0333289	ENST00000361099.7	STAT1	ENSG00000115415	signal transducer and activator of transcription 1 Source HGNC Symbol Acc HGNC 11362
F12	SBH0057577	ENST00000492635.1	TADA3	ENSG00000171148	transcriptional adaptor 3 Source HGNC Symbol Acc HGNC 19422
G01	SBH1220471	ENST00000449264.3	TNF	ENSG00000232810	tumor necrosis factor Source HGNC Symbol Acc HGNC 11892
G02	SBH1220473	ENST00000347739.3	TNFRSF10B	ENSG00000120889	TNF receptor superfamily member 10b Source HGNC Symbol Acc HGNC 11905
G03	SBH0393775	ENST00000312584.4	TNFRSF10D	ENSG00000173530	TNF receptor superfamily member 10d Source HGNC Symbol Acc HGNC 11907
G04	SBH1220486	ENST00000445888.6	TP53	ENSG00000141510	tumor protein p53 Source HGNC Symbol Acc HGNC 11998
G05	SBH0191649	ENST00000525390.1	TP53AIP1	ENSG00000120471	tumor protein p53 regulated apoptosis inducing protein 1 Source HGNC Symbol Acc HGNC 29984
G06	SBH1220487	ENST00000391878.6	TP53BP2	ENSG00000143514	tumor protein p53 binding protein 2 Source HGNC Symbol Acc HGNC 12000
G07	SBH0211471	ENST00000354600.9	TP63	ENSG00000073282	tumor protein p63 Source HGNC Symbol Acc HGNC 15979
G08	SBH1220488	ENST00000346387.8	TP73	ENSG00000078900	tumor protein p73 Source HGNC Symbol Acc HGNC 12003
G09	SBH1220492	ENST00000247668.7	TRAF2	ENSG00000127191	TNF receptor associated factor 2 Source HGNC Symbol Acc HGNC 12032
G10	SBH0061747	ENST00000647506.1	TSC1	ENSG00000165699	TSC complex subunit 1 Source HGNC Symbol Acc HGNC 12362
G11	SBH0326930	ENST00000650861.1	WT1	ENSG00000184937	Wilms tumor 1 Source HGNC Symbol Acc HGNC 12796
G12	SBH0094175	ENST00000429133.5	XRCC5	ENSG00000079246	X-ray repair cross complementing 5 Source HGNC Symbol Acc HGNC 12833
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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