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

Human Hedgehog Signaling Pathway

Cat. no. 249950 SBHS-078ZA

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** for further details.

	1	2	3	4	5	6	7	8	9	10	11	12
A	BCL2	BMP2	BMP4	BMP5	BMP6	BMP7	BMP8B	BOC	BTRC	CDON	CSNK1A1	CSNK1E
B	CTNNB1	DHH	DISP1	DISP2	ERBB4	FAT4	FBXW11	FGF9	FGFR3	FKBP8	FOXE1	FRMD6
C	GAS1	GLI1	GLI2	GLI3	GREM1	GSK3B	HHAT	HHIP	IFT52	IHH	KCTD11	LATS1
D	LATS2	LRP2	MAPK1	MOB1B	MTSS1	NF2	NPC1	NUMB	OTX2	PRKACA	PRKACB	PTCH1
E	PTCH2	PTCHD1	DISP3	PTCHD3	RAB23	RUNX2	SFRP1	SHH	SMO	STK3	STK36	SUFU
F	TP53	VEGFA	WIF1	WNT1	WNT10A	WNT10B	WNT11	WNT16	WNT2	WNT2B	WNT3	WNT3A
G	WNT4	WNT5A	WNT5B	WNT6	WNT7A	WNT7B	WNT8A	WNT8B	WNT9A	WNT9B	ZIC1	ZIC2
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	SBH1219786	ENST00000398117.1	BCL2	ENSG00000171791	BCL2, apoptosis regulator Source HGNC Symbol Acc HGNC 990
A02	SBH1219802	ENST00000378827.5	BMP2	ENSG00000125845	bone morphogenetic protein 2 Source HGNC Symbol Acc HGNC 1069
A03	SBH0613995	ENST00000417573.5	BMP4	ENSG00000125378	bone morphogenetic protein 4 Source HGNC Symbol Acc HGNC 1071
A04	SBH1219804	ENST00000370830.4	BMP5	ENSG00000112175	bone morphogenetic protein 5 Source HGNC Symbol Acc HGNC 1072
A05	SBH1219805	ENST00000283147.7	BMP6	ENSG00000153162	bone morphogenetic protein 6 Source HGNC Symbol Acc HGNC 1073
A06	SBH1219806	ENST00000450594.6	BMP7	ENSG00000101144	bone morphogenetic protein 7 Source HGNC Symbol Acc HGNC 1074
A07	SBH0222101	ENST00000372827.8	BMP8B	ENSG00000116985	bone morphogenetic protein 8b Source HGNC Symbol Acc HGNC 1075
A08	SBH0573397	ENST00000355385.7	BOC	ENSG00000144857	BOC cell adhesion associated, oncogene regulated Source HGNC Symbol Acc HGNC 17173
A09	SBH1219819	ENST00000393441.8	BTRC	ENSG00000166167	beta-transducin repeat containing E3 ubiquitin protein ligase Source HGNC Symbol Acc HGNC 1144
A10	SBH0172539	ENST00000527967.5	CDON	ENSG00000064309	cell adhesion associated, oncogene regulated Source HGNC Symbol Acc HGNC 17104
A11	SBH0331395	ENST00000377843.6	CSNK1A1	ENSG00000113712	casein kinase 1 alpha 1 Source HGNC Symbol Acc HGNC 2451
A12	SBH0382030	ENST00000396832.6	CSNK1E	ENSG00000213923	casein kinase 1 epsilon Source HGNC Symbol Acc HGNC 2453
B01	SBH0588482	ENST00000396183.7	CTNNB1	ENSG00000168036	catenin beta 1 Source HGNC Symbol Acc HGNC 2514
B02	SBH0519578	ENST00000649637.2	DHH	ENSG00000139549	desert hedgehog signaling molecule Source HGNC Symbol Acc HGNC 2865
B03	SBH0594617	ENST00000284476.7	DISP1	ENSG00000154309	dispatched RND transporter family member 1 Source HGNC Symbol Acc HGNC 19711
B04	SBH0388379	ENST00000561261.1	DISP2	ENSG00000140323	dispatched RND transporter family member 2 Source HGNC Symbol Acc HGNC 19712
B05	SBH0602730	ENST00000484594.5	ERBB4	ENSG00000178568	erb-b2 receptor tyrosine kinase 4 Source HGNC Symbol Acc HGNC 3432
B06	SBH0010019	ENST00000509444.1	FAT4	ENSG00000196159	FAT atypical cadherin 4 Source HGNC Symbol Acc HGNC 23109
B07	SBH1219997	ENST00000265094.9	FBXW11	ENSG00000072803	F-box and WD repeat domain containing 11 Source HGNC Symbol Acc HGNC 13607
B08	SBH0087968	ENST00000461657.1	FGF9	ENSG00000102678	fibroblast growth factor 9 Source HGNC Symbol Acc HGNC 3687
B09	SBH0188030	ENST00000440486.7	FGFR3	ENSG00000068078	fibroblast growth factor receptor 3 Source HGNC Symbol Acc HGNC 3690
B10	SBH0337606	ENST00000596015.1	FKBP8	ENSG00000105701	FKBP prolyl isomerase 8 Source HGNC Symbol Acc HGNC 3724
B11	SBH0657472	ENST00000375123.4	FOXE1	ENSG00000178919	forkhead box E1 Source HGNC Symbol Acc HGNC 3806
B12	SBH0610842	ENST00000555703.4	FRMD6	ENSG00000139926	FERM domain containing 6 Source HGNC Symbol Acc HGNC 19839
C01	SBH0495596	ENST00000298743.9	GAS1	ENSG00000180447	growth arrest specific 1 Source HGNC Symbol Acc HGNC 4165
C02	SBH0169622	ENST00000528467.1	GLI1	ENSG00000111087	GLI family zinc finger 1 Source HGNC Symbol Acc HGNC 4317
C03	SBH0023726	ENST00000452692.5	GLI2	ENSG00000074047	GLI family zinc finger 2 Source HGNC Symbol Acc HGNC 4318
C04	SBH0142624	ENST00000448703.5	GLI3	ENSG00000106571	GLI family zinc finger 3 Source HGNC Symbol Acc HGNC 4319
C05	SBH1220039	ENST00000651154.1	GREM1	ENSG00000166923	gremlin 1, DAN family BMP antagonist Source HGNC Symbol Acc HGNC 2001
C06	SBH0579883	ENST00000316626.5	GSK3B	ENSG00000082701	glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617
C07	SBH0011368	ENST00000413764.6	HHAT	ENSG00000054392	hedgehog acyltransferase Source HGNC Symbol Acc HGNC 18270
C08	SBH0369669	ENST00000505891.5	HHIP	ENSG00000164161	hedgehog interacting protein Source HGNC Symbol Acc HGNC 14866
C09	SBH0363737	ENST00000373039.4	IFT52	ENSG00000101052	intraflagellar transport 52 Source HGNC Symbol Acc HGNC 15901
C10	SBH0302017	ENST00000295731.7	IHH	ENSG00000163501	Indian hedgehog signaling molecule Source HGNC Symbol Acc HGNC 5956
		ENST00000333		ENSG00000	potassium channel tetramerization domain containing 11 Source HGNC Symbol

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0350589	751.6	KCTD11	213859	Acc HGNC 21302
C12	SBH0046904	ENST00000253339.9	LATS1	ENSG00000131023	large tumor suppressor kinase 1 Source HGNC Symbol Acc HGNC 6514
D01	SBH0346534	ENST00000382592.5	LATS2	ENSG00000150457	large tumor suppressor kinase 2 Source HGNC Symbol Acc HGNC 6515
D02	SBH0244488	ENST00000443831.1	LRP2	ENSG00000081479	LDL receptor related protein 2 Source HGNC Symbol Acc HGNC 6694
D03	SBH1220192	ENST00000544786.1	MAPK1	ENSG00000100030	mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871
D04	SBH0169302	ENST00000309395.6	MOB1B	ENSG00000173542	MOB kinase activator 1B Source HGNC Symbol Acc HGNC 29801
D05	SBH0360749	ENST00000522118.1	MTSS1	ENSG00000170873	MTSS1, I-BAR domain containing Source HGNC Symbol Acc HGNC 20443
D06	SBH0223108	ENST00000361452.8	NF2	ENSG00000186575	neurofibromin 2 Source HGNC Symbol Acc HGNC 7773
D07	SBH1220276	ENST00000269228.10	NPC1	ENSG00000141458	NPC intracellular cholesterol transporter 1 Source HGNC Symbol Acc HGNC 7897
D08	SBH0378382	ENST00000554546.5	NUMB	ENSG00000133961	NUMB, endocytic adaptor protein Source HGNC Symbol Acc HGNC 8060
D09	SBH0166045	ENST00000554788.5	OTX2	ENSG00000165588	orthodenticle homeobox 2 Source HGNC Symbol Acc HGNC 8522
D10	SBH0440536	ENST00000308677.8	PRKACA	ENSG00000072062	protein kinase cAMP-activated catalytic subunit alpha Source HGNC Symbol Acc HGNC 9380
D11	SBH0491110	ENST00000432111.5	PRKACB	ENSG00000142875	protein kinase cAMP-activated catalytic subunit beta Source HGNC Symbol Acc HGNC 9381
D12	SBH0360047	ENST00000331920.10	PTCH1	ENSG00000185920	patched 1 Source HGNC Symbol Acc HGNC 9585
E01	SBH0329362	ENST00000447098.6	PTCH2	ENSG00000117425	patched 2 Source HGNC Symbol Acc HGNC 9586
E02	SBH0087372	ENST00000456522.1	PTCHD1	ENSG00000165186	patched domain containing 1 Source HGNC Symbol Acc HGNC 26392
E03	SBH0067348	ENST00000294484.7	DISP3	ENSG00000204624	dispatched RND transporter family member 3 Source HGNC Symbol Acc HGNC 29251
E04	SBH0458621	ENST00000438700.8	PTCHD3	ENSG00000182077	patched domain containing 3 Source HGNC Symbol Acc HGNC 24776
E05	SBH0181491	ENST00000468148.6	RAB23	ENSG00000112210	RAB23, member RAS oncogene family Source HGNC Symbol Acc HGNC 14263
E06	SBH0662907	ENST00000465038.6	RUNX2	ENSG00000124813	runt related transcription factor 2 Source HGNC Symbol Acc HGNC 10472
E07	SBH1220394	ENST00000220772.8	SFRP1	ENSG00000104332	secreted frizzled related protein 1 Source HGNC Symbol Acc HGNC 10776
E08	SBH0041689	ENST00000430104.5	SHH	ENSG00000164690	sonic hedgehog signaling molecule Source HGNC Symbol Acc HGNC 10848
E09	SBH0217804	ENST00000462420.2	SMO	ENSG00000128602	smoothened, frizzled class receptor Source HGNC Symbol Acc HGNC 11119
E10	SBH0395272	ENST00000419617.7	STK3	ENSG00000104375	serine/threonine kinase 3 Source HGNC Symbol Acc HGNC 11406
E11	SBH0167889	ENST00000440309.5	STK36	ENSG00000163482	serine/threonine kinase 36 Source HGNC Symbol Acc HGNC 17209
E12	SBH0545396	ENST00000369899.6	SUFU	ENSG00000107882	SUFU negative regulator of hedgehog signaling Source HGNC Symbol Acc HGNC 16466
F01	SBH1220486	ENST00000445888.6	TP53	ENSG00000141510	tumor protein p53 Source HGNC Symbol Acc HGNC 11998
F02	SBH0420322	ENST00000425836.6	VEGFA	ENSG00000112715	vascular endothelial growth factor A Source HGNC Symbol Acc HGNC 12680
F03	SBH1220525	ENST00000286574.9	WIF1	ENSG00000156076	WNT inhibitory factor 1 Source HGNC Symbol Acc HGNC 18081
F04	SBH0160221	ENST00000293549.3	WNT1	ENSG00000125084	Wnt family member 1 Source HGNC Symbol Acc HGNC 12774
F05	SBH1220527	ENST00000258411.8	WNT10A	ENSG00000135925	Wnt family member 10A Source HGNC Symbol Acc HGNC 13829
F06	SBH0031770	ENST00000301061.9	WNT10B	ENSG00000169884	Wnt family member 10B Source HGNC Symbol Acc HGNC 12775
F07	SBH1220528	ENST00000322563.8	WNT11	ENSG00000085741	Wnt family member 11 Source HGNC Symbol Acc HGNC 12776
F08	SBH1220529	ENST00000361301.6	WNT16	ENSG00000002745	Wnt family member 16 Source HGNC Symbol Acc HGNC 16267
F09	SBH0301163	ENST00000265441.7	WNT2	ENSG00000105989	Wnt family member 2 Source HGNC Symbol Acc HGNC 12780
F10	SBH1220530	ENST00000369686.9	WNT2B	ENSG00000134245	Wnt family member 2B Source HGNC Symbol Acc HGNC 12781

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH1220531	ENST00000225512.6	WNT3	ENSG00000108379	Wnt family member 3 Source HGNC Symbol Acc HGNC 12782
F12	SBH1220532	ENST00000284523.2	WNT3A	ENSG00000154342	Wnt family member 3A Source HGNC Symbol Acc HGNC 15983
G01	SBH1220533	ENST00000290167.11	WNT4	ENSG00000162552	Wnt family member 4 Source HGNC Symbol Acc HGNC 12783
G02	SBH0548767	ENST00000264634.8	WNT5A	ENSG00000114251	Wnt family member 5A Source HGNC Symbol Acc HGNC 12784
G03	SBH1220534	ENST00000397196.7	WNT5B	ENSG00000111186	Wnt family member 5B Source HGNC Symbol Acc HGNC 16265
G04	SBH1220535	ENST00000233948.4	WNT6	ENSG00000115596	Wnt family member 6 Source HGNC Symbol Acc HGNC 12785
G05	SBH1220536	ENST00000285018.4	WNT7A	ENSG00000154764	Wnt family member 7A Source HGNC Symbol Acc HGNC 12786
G06	SBH1220537	ENST00000339464.9	WNT7B	ENSG00000188064	Wnt family member 7B Source HGNC Symbol Acc HGNC 12787
G07	SBH0198667	ENST00000398754.1	WNT8A	ENSG00000061492	Wnt family member 8A Source HGNC Symbol Acc HGNC 12788
G08	SBH0597597	ENST00000343737.5	WNT8B	ENSG00000075290	Wnt family member 8B Source HGNC Symbol Acc HGNC 12789
G09	SBH1220538	ENST00000272164.6	WNT9A	ENSG00000143816	Wnt family member 9A Source HGNC Symbol Acc HGNC 12778
G10	SBH0107840	ENST00000575372.5	WNT9B	ENSG00000158955	Wnt family member 9B Source HGNC Symbol Acc HGNC 12779
G11	SBH0050477	ENST00000474034.1	ZIC1	ENSG00000152977	Zic family member 1 Source HGNC Symbol Acc HGNC 12872
G12	SBH0339647	ENST00000477213.1	ZIC2	ENSG00000043355	Zic family member 2 Source HGNC Symbol Acc HGNC 12873
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 µl reactions: 20 µl 8x gDNA Removal Mix, 10 µl Reverse Transcription Enzyme, 40 µl Reverse Transcription Mix (containing RT primers), 20 µl Internal Control RNA, 1.9 ml RNase-Free Water	205410
QuantiNova SYBR Green RT-PCR Kit (100)*	For 100 x 20 µl reactions: 1 ml QuantiNova SYBR Green RT-PCR Master Mix, 20 µl QuantiNova SYBR Green RT Mix, 20 µl Internal Control RNA, 500 µl Yellow Template Dilution Buffer, 250 µl ROX Reference Dye, 1.9 µl RNase-Free Water	208152
QuantiNova SYBR Green PCR Kit (100)*	For 100 x 20 µl reactions: 1 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 µl QuantiNova Yellow Template Dilution Buffer, 250 µl 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.