

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

## Human Hedgehog Signaling Pathway

Cat. no. 249955 UPHS-078ZR

For study focus gene expression analysis

### Shipping and storage

QuantiNova LNA Probe PCR Focus Panels are shipped at room temperature. Immediately upon receipt, they should be stored protected from light 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 Probe PCR Focus Panels should be used together with the QuantiNova Reverse Transcription Kit for cDNA synthesis and the QuantiNova Probe PCR Kit (Mastermix) for PCR.

### Panel layout (Rotor-Gene): QuantiNova LNA Probe 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 Probe PCR 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	BCL2	BMP2	BMP4	BMP5	BMP6	BMP7	BMP8B	BOC	BTRC	CDON	CSNK1A1	CSNK1E
B	CTNNB1	DHH	DISP1	DISP2	ERBB4	FAT4	FBXW11	FGF9	FGFR3	FKBP8	FOXO1	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 Probe PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	UPFH1132900	ENST00000333681.5	BCL2	ENSG00000171791	BCL2, apoptosis regulator Source HGNC Symbol Acc HGNC 990
A02	UPFH1132780	ENST000003378827.5	BMP2	ENSG00000125845	bone morphogenetic protein 2 Source HGNC Symbol Acc HGNC 1069
A03	UPFH0443169	ENST00000558984.1	BMP4	ENSG00000125378	bone morphogenetic protein 4 Source HGNC Symbol Acc HGNC 1071
A04	UPFH1132864	ENST000003370830.4	BMP5	ENSG00000112175	bone morphogenetic protein 5 Source HGNC Symbol Acc HGNC 1072
A05	UPFH1172901	ENST00000283147.7	BMP6	ENSG00000153162	bone morphogenetic protein 6 Source HGNC Symbol Acc HGNC 1073
A06	UPFH1132781	ENST00000433911.1	BMP7	ENSG00000101144	bone morphogenetic protein 7 Source HGNC Symbol Acc HGNC 1074
A07	UPFH0580680	ENST000003372827.8	BMP8B	ENSG00000116985	bone morphogenetic protein 8b Source HGNC Symbol Acc HGNC 1075
A08	UPFH1125435	ENST00000471963.6	BOC	ENSG00000144857	BOC cell adhesion associated, oncogene regulated Source HGNC Symbol Acc HGNC 17173
A09	UPFH0358747	ENST000003370187.8	BTRC	ENSG00000166167	beta-transducin repeat containing E3 ubiquitin protein ligase Source HGNC Symbol Acc HGNC 1144
A10	UPFH0324468	ENST00000531738.5	CDON	ENSG00000064309	cell adhesion associated, oncogene regulated Source HGNC Symbol Acc HGNC 17104
A11	UPFH0546143	ENST000003377843.6	CSNK1A1	ENSG00000113712	casein kinase 1 alpha 1 Source HGNC Symbol Acc HGNC 2451
A12	UPFH0538939	ENST000003396832.6	CSNK1E	ENSG00000213923	casein kinase 1 epsilon Source HGNC Symbol Acc HGNC 2453
B01	UPFH0097734	ENST000003396183.7	CTNNB1	ENSG00000168036	catenin beta 1 Source HGNC Symbol Acc HGNC 2514
B02	UPFH0095877	ENST00000649637.2	DHH	ENSG00000139549	desert hedgehog signaling molecule Source HGNC Symbol Acc HGNC 2865
B03	UPFH0173027	ENST000003360254.3	DISP1	ENSG00000154309	dispatched RND transporter family member 1 Source HGNC Symbol Acc HGNC 19711
B04	UPFH0316584	ENST00000558623.1	DISP2	ENSG00000140323	dispatched RND transporter family member 2 Source HGNC Symbol Acc HGNC 19712
B05	UPFH0292006	ENST00000436443.5	ERBB4	ENSG00000178568	erb-b2 receptor tyrosine kinase 4 Source HGNC Symbol Acc HGNC 3432
B06	UPFH0156082	ENST000003335110.5	FAT4	ENSG00000196159	FAT atypical cadherin 4 Source HGNC Symbol Acc HGNC 23109
B07	UPFH0321621	ENST000002265094.9	FBXW11	ENSG00000072803	F-box and WD repeat domain containing 11 Source HGNC Symbol Acc HGNC 13607
B08	UPFH0365297	ENST00000461657.1	FGF9	ENSG00000102678	fibroblast growth factor 9 Source HGNC Symbol Acc HGNC 3687
B09	UPFH0584716	ENST00000440486.7	FGFR3	ENSG00000068078	fibroblast growth factor receptor 3 Source HGNC Symbol Acc HGNC 3690
B10	UPFH0397070	ENST00000601844.5	FKBP8	ENSG00000105701	FKBP prolyl isomerase 8 Source HGNC Symbol Acc HGNC 3724
B11	UPFH0054234	ENST000003375123.4	FOXE1	ENSG00000178919	forkhead box E1 Source HGNC Symbol Acc HGNC 3806
B12	UPFH0400370	ENST00000553556.2	FRMD6	ENSG00000139926	FERM domain containing 6 Source HGNC Symbol Acc HGNC 19839
C01	UPFH0019185	ENST00000298743.9	GAS1	ENSG00000180447	growth arrest specific 1 Source HGNC Symbol Acc HGNC 4165
C02	UPFH0266526	ENST00000546141.5	GLI1	ENSG00000111087	GLI family zinc finger 1 Source HGNC Symbol Acc HGNC 4317
C03	UPFH0462614	ENST00000435313.6	GLI2	ENSG00000074047	GLI family zinc finger 2 Source HGNC Symbol Acc HGNC 4318
C04	UPFH0025980	ENST00000479210.1	GLI3	ENSG00000106571	GLI family zinc finger 3 Source HGNC Symbol Acc HGNC 4319
C05	UPFH1172908	ENST00000652365.1	GREM1	ENSG00000166923	gremlin 1, DAN family BMP antagonist Source HGNC Symbol Acc HGNC 2001
C06	UPFH0470775	ENST000003316626.5	GSK3B	ENSG00000082701	glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617
C07	UPFH0388103	ENST00000545154.5	HHAT	ENSG00000054392	hedgehog acyltransferase Source HGNC Symbol Acc HGNC 18270
C08	UPFH0426966	ENST00000515080.1	HHIP	ENSG00000164161	hedgehog interacting protein Source HGNC Symbol Acc HGNC 14866
C09	UPFH0180162	ENST000003373039.4	IFT52	ENSG00000101052	intraflagellar transport 52 Source HGNC Symbol Acc HGNC 15901
C10	UPFH0570027	ENST00000295731.7	IHH	ENSG00000163501	Indian hedgehog signaling molecule Source HGNC Symbol Acc HGNC 5956
		ENST00000576		ENSG000000	potassium channel tetramerization domain containing 11 Source HGNC Symbol

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	UPFH0185072	980.2	KCTD11	213859	Acc HGNC 21302
C12	UPFH0410954	ENST00000542747.5	LATS1	ENSG00000131023	large tumor suppressor kinase 1 Source HGNC Symbol Acc HGNC 6514
D01	UPFH0308328	ENST00000382592.5	LATS2	ENSG00000150457	large tumor suppressor kinase 2 Source HGNC Symbol Acc HGNC 6515
D02	UPFH0410908	ENST00000443831.1	LRP2	ENSG00000081479	LDL receptor related protein 2 Source HGNC Symbol Acc HGNC 6694
D03	UPFH0366815	ENST00000215832.10	MAPK1	ENSG00000100030	mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871
D04	UPFH0572966	ENST00000309395.6	MOB1B	ENSG00000173542	MOB kinase activator 1B Source HGNC Symbol Acc HGNC 29801
D05	UPFH0112010	ENST00000431961.6	MTSS1	ENSG00000170873	MTSS1, I-BAR domain containing Source HGNC Symbol Acc HGNC 20443
D06	UPFH0114449	ENST00000361166.8	NF2	ENSG00000186575	neurofibromin 2 Source HGNC Symbol Acc HGNC 7773
D07	UPFH1132596	ENST00000269228.10	NPC1	ENSG00000141458	NPC intracellular cholesterol transporter 1 Source HGNC Symbol Acc HGNC 7897
D08	UPFH0067916	ENST00000555238.5	NUMB	ENSG00000133961	NUMB, endocytic adaptor protein Source HGNC Symbol Acc HGNC 8060
D09	UPFH0514197	ENST00000554845.1	OTX2	ENSG00000165588	orthodenticle homeobox 2 Source HGNC Symbol Acc HGNC 8522
D10	UPFH0332354	ENST00000593092.1	PRKACA	ENSG00000072062	protein kinase cAMP-activated catalytic subunit alpha Source HGNC Symbol Acc HGNC 9380
D11	UPFH0554579	ENST00000470673.5	PRKACB	ENSG00000142875	protein kinase cAMP-activated catalytic subunit beta Source HGNC Symbol Acc HGNC 9381
D12	UPFH0155270	ENST00000331920.10	PTCH1	ENSG00000185920	patched 1 Source HGNC Symbol Acc HGNC 9585
E01	UPFH0600067	ENST00000447098.6	PTCH2	ENSG00000117425	patched 2 Source HGNC Symbol Acc HGNC 9586
E02	UPFH0211018	ENST00000379361.5	PTCHD1	ENSG00000165186	patched domain containing 1 Source HGNC Symbol Acc HGNC 26392
E03	UPFH0215576	ENST00000294484.7	DISP3	ENSG00000204624	dispatched RND transporter family member 3 Source HGNC Symbol Acc HGNC 29251
E04	UPFH0262521	ENST00000438700.8	PTCHD3	ENSG00000182077	patched domain containing 3 Source HGNC Symbol Acc HGNC 24776
E05	UPFH0466422	ENST00000317483.4	RAB23	ENSG00000112210	RAB23, member RAS oncogene family Source HGNC Symbol Acc HGNC 14263
E06	UPFH0537167	ENST00000371436.10	RUNX2	ENSG00000124813	runt related transcription factor 2 Source HGNC Symbol Acc HGNC 10472
E07	UPFH1132676	ENST00000220772.8	SFRP1	ENSG00000104332	secreted frizzled related protein 1 Source HGNC Symbol Acc HGNC 10776
E08	UPFH0252724	ENST00000430104.5	SHH	ENSG00000164690	sonic hedgehog signaling molecule Source HGNC Symbol Acc HGNC 10848
E09	UPFH0104215	ENST00000462420.2	SMO	ENSG00000128602	smoothed, frizzled class receptor Source HGNC Symbol Acc HGNC 11119
E10	UPFH0182082	ENST00000419617.7	STK3	ENSG00000104375	serine/threonine kinase 3 Source HGNC Symbol Acc HGNC 11406
E11	UPFH0608440	ENST00000470568.1	STK36	ENSG00000163482	serine/threonine kinase 36 Source HGNC Symbol Acc HGNC 17209
E12	UPFH0106393	ENST00000471000.1	SUFU	ENSG00000107882	SUFU negative regulator of hedgehog signaling Source HGNC Symbol Acc HGNC 16466
F01	UPFH0565795	ENST00000269305.8	TP53	ENSG00000141510	tumor protein p53 Source HGNC Symbol Acc HGNC 11998
F02	UPFH0281656	ENST00000425836.6	VEGFA	ENSG00000112715	vascular endothelial growth factor A Source HGNC Symbol Acc HGNC 12680
F03	UPFH1132759	ENST00000286574.9	WIF1	ENSG00000156076	WNT inhibitory factor 1 Source HGNC Symbol Acc HGNC 18081
F04	UPFH0344484	ENST00000293549.3	WNT1	ENSG00000125084	Wnt family member 1 Source HGNC Symbol Acc HGNC 12774
F05	UPFH1172916	ENST00000258411.8	WNT10A	ENSG00000135925	Wnt family member 10A Source HGNC Symbol Acc HGNC 13829
F06	UPFH0490750	ENST00000301061.9	WNT10B	ENSG00000169884	Wnt family member 10B Source HGNC Symbol Acc HGNC 12775
F07	UPFH1132929	ENST00000322563.8	WNT11	ENSG00000085741	Wnt family member 11 Source HGNC Symbol Acc HGNC 12776
F08	UPFH1132761	ENST00000361301.6	WNT16	ENSG00000002745	Wnt family member 16 Source HGNC Symbol Acc HGNC 16267
F09	UPFH0138379	ENST00000265441.7	WNT2	ENSG00000105989	Wnt family member 2 Source HGNC Symbol Acc HGNC 12780
F10	UPFH0204669	ENST00000369686.9	WNT2B	ENSG00000134245	Wnt family member 2B Source HGNC Symbol Acc HGNC 12781

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFH1132762	ENST00000225512.6	WNT3	ENSG00000108379	Wnt family member 3 Source HGNC Symbol Acc HGNC 12782
F12	UPFH0486867	ENST00000284523.2	WNT3A	ENSG00000154342	Wnt family member 3A Source HGNC Symbol Acc HGNC 15983
G01	UPFH1132763	ENST00000290167.11	WNT4	ENSG00000162552	Wnt family member 4 Source HGNC Symbol Acc HGNC 12783
G02	UPFH0355989	ENST00000264634.8	WNT5A	ENSG00000114251	Wnt family member 5A Source HGNC Symbol Acc HGNC 12784
G03	UPFH1132764	ENST00000537031.5	WNT5B	ENSG00000111186	Wnt family member 5B Source HGNC Symbol Acc HGNC 16265
G04	UPFH1132765	ENST00000233948.4	WNT6	ENSG00000115596	Wnt family member 6 Source HGNC Symbol Acc HGNC 12785
G05	UPFH0406663	ENST00000285018.4	WNT7A	ENSG00000154764	Wnt family member 7A Source HGNC Symbol Acc HGNC 12786
G06	UPFH1132766	ENST00000410058.1	WNT7B	ENSG00000188064	Wnt family member 7B Source HGNC Symbol Acc HGNC 12787
G07	UPFH0320758	ENST00000398754.1	WNT8A	ENSG00000061492	Wnt family member 8A Source HGNC Symbol Acc HGNC 12788
G08	UPFH0440255	ENST00000343737.5	WNT8B	ENSG00000075290	Wnt family member 8B Source HGNC Symbol Acc HGNC 12789
G09	UPFH0030443	ENST00000272164.6	WNT9A	ENSG00000143816	Wnt family member 9A Source HGNC Symbol Acc HGNC 12778
G10	UPFH0059858	ENST00000575372.5	WNT9B	ENSG00000158955	Wnt family member 9B Source HGNC Symbol Acc HGNC 12779
G11	UPFH0420811	ENST00000474034.1	ZIC1	ENSG00000152977	Zic family member 1 Source HGNC Symbol Acc HGNC 12872
G12	UPFH0512161	ENST00000376335.8	ZIC2	ENSG00000043355	Zic family member 2 Source HGNC Symbol Acc HGNC 12873
H01	UPFH1132936	ENST00000646664.1	ACTB	ENSG00000075624	actin beta Source HGNC Symbol Acc HGNC 132
H02	UPFH1132937	ENST00000544417.5	B2M	ENSG00000166710	beta-2-microglobulin Source HGNC Symbol Acc HGNC 914
H03	UPFH1132938	ENST00000229239.10	GAPDH	ENSG00000111640	glyceraldehyde-3-phosphate dehydrogenase Source HGNC Symbol Acc HGNC 4141
H04	UPFH1132939	ENST00000298556.8	HPRT1	ENSG00000165704	hypoxanthine phosphoribosyltransferase 1 Source HGNC Symbol Acc HGNC 5157
H05	UPFH1132941	ENST00000392514.9	RPLP0	ENSG00000089157	ribosomal protein lateral stalk subunit P0 Source HGNC Symbol Acc HGNC 10371
H06	UPFH1126608	UPL_HGDC	HGDC	UPL_HGDC	Human Genomic DNA Contamination
H07	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H08	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H09	UPFH1126606	UPL_QIC	QIC	UPL_QIC	QuantiNova Internal Control
H10	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control
H11	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control
H12	UPFH1126605	UPL_PPC	PPC	UPL_PPC	Positive PCR Control



## Related products

Product	Contents	Cat. no.
QuantiNova LNA Probe PCR QC Panel	These panels are designed to assess the quality of RNA samples before characterization using QuantiNova LNA Probe PCR Focus Panels; available in 96-well, 384-well, and Rotor-Disc 100 formats	249945
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 Probe RT-PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml QuantiNova Probe RT-PCR Master Mix, 20 $\mu$ l QuantiNova Probe 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	208352
QuantiNova Probe PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml 2x QuantiNova Probe PCR Master Mix, 500 $\mu$ l QuantiNova Yellow Template Dilution Buffer, 250 $\mu$ l QN ROX Reference Dye, 1.9 ml Water	208252

\*Larger kit sizes available.

The QuantiNova LNA Probe 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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