

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

## Human Telomeres & Telomerase

Cat. no. 249955 UPHS-010ZR

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	ABL1	ACD	AKT1	ATM	ATPSF1C	BCL2	BLM	CDK2	CHEK1	CHEK2	DCLRE1B	DCLRE1C
B	DKC1	EGF	EME1	ERCC1	ERCC4	GAR1	HAT1	HNRNPA2B1	HNRNPD	HSP90AA1	HSPA1L	IGF1
C	KRAS	KRIT1	MEN1	MRE11	MSH2	MSH3	MUS81	MYC	NBN	NCL	NHP2	NOP10
D	STN1	PARP1	PAX8	PIF1	PINK1	PLK1	POT1	PPARG	PPP2R1A	PPP2R1B	PRKCA	PRKCB
E	PRKDC	PTGES3	PURA	RAD17	RAD50	RAP1A	RAPGEF1	RASSF1	RB1	RFC1	RIF1	RTEL1
F	SART1	SIRT2	SIRT6	SLX4	SMAD3	SMG6	SP1	SSB	SUN1	TEP1	TERF1	TERF2
G	TERF2IP	TERT	TGFB1	TINF2	TNKS	TNKS2	TP53	TP53BP1	TPP1	WRAP53	XRCC5	XRCC6
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	UPFH1132770	ENST00000318560.6	ABL1	ENSG00000097007	ABL proto-oncogene 1, non-receptor tyrosine kinase Source HGNC Symbol Acc HGNC 76
A02	UPFH0566627	ENST000003393919.10	ACD	ENSG00000102977	ACD, shelterin complex subunit and telomerase recruitment factor Source HGNC Symbol Acc HGNC 25070
A03	UPFH0453992	ENST00000555528.5	AKT1	ENSG00000142208	AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391
A04	UPFH1132252	ENST00000527805.5	ATM	ENSG00000149311	ATM serine/threonine kinase Source HGNC Symbol Acc HGNC 795
A05	UPFH0196265	ENST00000460820.6	ATP5F1C	ENSG00000165629	ATP synthase F1 subunit gamma Source HGNC Symbol Acc HGNC 833
A06	UPFH1132900	ENST00000333681.5	BCL2	ENSG00000171791	BCL2, apoptosis regulator Source HGNC Symbol Acc HGNC 990
A07	UPFH1132273	ENST000003355112.8	BLM	ENSG00000197299	BLM RecQ like helicase Source HGNC Symbol Acc HGNC 1058
A08	UPFH1132961	ENST00000266970.9	CDK2	ENSG00000123374	cyclin dependent kinase 2 Source HGNC Symbol Acc HGNC 1771
A09	UPFH1132313	ENST00000427383.6	CHEK1	ENSG00000149554	checkpoint kinase 1 Source HGNC Symbol Acc HGNC 1925
A10	UPFH1132314	ENST00000439200.5	CHEK2	ENSG00000183765	checkpoint kinase 2 Source HGNC Symbol Acc HGNC 16627
A11	UPFH0520326	ENST00000466480.2	DCLRE1B	ENSG00000118655	DNA cross-link repair 1B Source HGNC Symbol Acc HGNC 17641
A12	UPFH0376591	ENST00000378278.7	DCLRE1C	ENSG00000152457	DNA cross-link repair 1C Source HGNC Symbol Acc HGNC 17642
B01	UPFH0521239	ENST00000481062.1	DKC1	ENSG00000130826	dyskerin pseudouridine synthase 1 Source HGNC Symbol Acc HGNC 2890
B02	UPFH1132380	ENST00000503392.1	EGF	ENSG00000138798	epidermal growth factor Source HGNC Symbol Acc HGNC 3229
B03	UPFH0030111	ENST00000510007.5	EME1	ENSG00000154920	essential meiotic structure-specific endonuclease 1 Source HGNC Symbol Acc HGNC 24965
B04	UPFH0129620	ENST00000300853.7	ERCC1	ENSG00000102061	ERCC excision repair 1, endonuclease non-catalytic subunit Source HGNC Symbol Acc HGNC 3433
B05	UPFH0328385	ENST00000311895.7	ERCC4	ENSG00000175595	ERCC excision repair 4, endonuclease catalytic subunit Source HGNC Symbol Acc HGNC 3436
B06	UPFH0050420	ENST00000394631.7	GAR1	ENSG00000109534	GAR1 ribonucleoprotein Source HGNC Symbol Acc HGNC 14264
B07	UPFH0343734	ENST00000412731.5	HAT1	ENSG00000128708	histone acetyltransferase 1 Source HGNC Symbol Acc HGNC 4821
B08	UPFH0590875	ENST00000618183.4	HNRNPA2B1	ENSG00000122566	heterogeneous nuclear ribonucleoprotein A2/B1 Source HGNC Symbol Acc HGNC 5033
B09	UPFH0476299	ENST00000508119.5	HNRNPD	ENSG00000138668	heterogeneous nuclear ribonucleoprotein D Source HGNC Symbol Acc HGNC 5036
B10	UPFH0292880	ENST00000334701.11	HSP90AA1	ENSG00000080824	heat shock protein 90 alpha family class A member 1 Source HGNC Symbol Acc HGNC 5253
B11	UPFH0163270	ENST00000375654.5	HSPA1L	ENSG00000204390	heat shock protein family A (Hsp70) member 1 like Source HGNC Symbol Acc HGNC 5234
B12	UPFH0229443	ENST00000337514.10	IGF1	ENSG00000017427	insulin like growth factor 1 Source HGNC Symbol Acc HGNC 5464
C01	UPFH0376060	ENST00000557334.5	KRAS	ENSG00000133703	KRAS proto-oncogene, GTPase Source HGNC Symbol Acc HGNC 6407
C02	UPFH0362789	ENST00000458493.5	KRIT1	ENSG00000001631	KRIT1, ankyrin repeat containing Source HGNC Symbol Acc HGNC 1573
C03	UPFH0327972	ENST00000377321.5	MEN1	ENSG00000133895	menin 1 Source HGNC Symbol Acc HGNC 7010
C04	UPFH1132556	ENST00000323977.7	MRE11	ENSG00000020922	MRE11 homolog, double strand break repair nuclease Source HGNC Symbol Acc HGNC 7230
C05	UPFH0051784	ENST00000233146.6	MSH2	ENSG00000095002	mutS homolog 2 Source HGNC Symbol Acc HGNC 7325
C06	UPFH1132557	ENST00000265081.7	MSH3	ENSG00000113318	mutS homolog 3 Source HGNC Symbol Acc HGNC 7326
C07	UPFH0277031	ENST00000529786.1	MUS81	ENSG00000172732	MUS81 structure-specific endonuclease subunit Source HGNC Symbol Acc HGNC 29814
C08	UPFH1132563	ENST00000517291.1	MYC	ENSG00000136997	MYC proto-oncogene, bHLH transcription factor Source HGNC Symbol Acc HGNC 7553
C09	UPFH0612261	ENST00000265433.7	NBN	ENSG00000104320	nibrin Source HGNC Symbol Acc HGNC 7652
C10	UPFH0419360	ENST00000454824.5	NCL	ENSG00000115053	nucleolin Source HGNC Symbol Acc HGNC 7667
		ENST00000514		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	UPFH0377951	354.5	NHP2	145912	NHP2 ribonucleoprotein Source HGNC Symbol Acc HGNC 14377
C12	UPFH0578195	ENST00000328848.5	NOP10	ENSG00000182117	NOP10 ribonucleoprotein Source HGNC Symbol Acc HGNC 14378
D01	UPFH0516183	ENST00000369764.1	STN1	ENSG00000107960	STN1, CST complex subunit Source HGNC Symbol Acc HGNC 26200
D02	UPFH0203594	ENST00000490921.5	PARP1	ENSG00000143799	poly(ADP-ribose) polymerase 1 Source HGNC Symbol Acc HGNC 270
D03	UPFH0498999	ENST00000263334.9	PAX8	ENSG00000125618	paired box 8 Source HGNC Symbol Acc HGNC 8622
D04	UPFH0253084	ENST00000559872.1	PIF1	ENSG00000140451	PIF1 5'-to-3' DNA helicase Source HGNC Symbol Acc HGNC 26220
D05	UPFH1132625	ENST00000314787.8	PINX1	ENSG00000254093	PIN2 (TERF1) interacting telomerase inhibitor 1 Source HGNC Symbol Acc HGNC 30046
D06	UPFH0561784	ENST00000300093.9	PLK1	ENSG00000166851	polo like kinase 1 Source HGNC Symbol Acc HGNC 9077
D07	UPFH0000556	ENST00000357628.8	POT1	ENSG00000128513	protection of telomeres 1 Source HGNC Symbol Acc HGNC 17284
D08	UPFH0284890	ENST00000477039.5	PPARG	ENSG00000132170	peroxisome proliferator activated receptor gamma Source HGNC Symbol Acc HGNC 9236
D09	UPFH0559678	ENST00000473455.2	PPP2R1A	ENSG00000105568	protein phosphatase 2 scaffold subunit Aalpha Source HGNC Symbol Acc HGNC 9302
D10	UPFH0521589	ENST00000531890.1	PPP2R1B	ENSG00000137713	protein phosphatase 2 scaffold subunit Abeta Source HGNC Symbol Acc HGNC 9303
D11	UPFH0607768	ENST00000578063.5	PRKCA	ENSG00000154229	protein kinase C alpha Source HGNC Symbol Acc HGNC 9393
D12	UPFH0529104	ENST00000646168.1	PRKCB	ENSG00000166501	protein kinase C beta Source HGNC Symbol Acc HGNC 9395
E01	UPFH0575007	ENST00000314191.6	PRKDC	ENSG00000253729	protein kinase, DNA-activated, catalytic subunit Source HGNC Symbol Acc HGNC 9413
E02	UPFH0318382	ENST00000614328.4	PTGES3	ENSG00000110958	prostaglandin E synthase 3 Source HGNC Symbol Acc HGNC 16049
E03	UPFH0227049	ENST00000331327.4	PURA	ENSG00000185129	purine rich element binding protein A Source HGNC Symbol Acc HGNC 9701
E04	UPFH0301660	ENST00000514626.1	RAD17	ENSG00000152942	RAD17 checkpoint clamp loader component Source HGNC Symbol Acc HGNC 9807
E05	UPFH1132922	ENST00000416135.5	RAD50	ENSG00000113522	RAD50 double strand break repair protein Source HGNC Symbol Acc HGNC 9816
E06	UPFH0233643	ENST00000369709.3	RAP1A	ENSG00000116473	RAP1A, member of RAS oncogene family Source HGNC Symbol Acc HGNC 9855
E07	UPFH0396768	ENST00000438647.3	RAPGEF1	ENSG00000107263	Rap guanine nucleotide exchange factor 1 Source HGNC Symbol Acc HGNC 4568
E08	UPFH0117232	ENST00000616212.4	RASSF1	ENSG00000068028	Ras association domain family member 1 Source HGNC Symbol Acc HGNC 9882
E09	UPFH0001483	ENST00000267163.5	RB1	ENSG00000139687	RB transcriptional corepressor 1 Source HGNC Symbol Acc HGNC 9884
E10	UPFH0174657	ENST00000504849.5	RFC1	ENSG00000035928	replication factor C subunit 1 Source HGNC Symbol Acc HGNC 9969
E11	UPFH0137151	ENST00000414861.6	RIF1	ENSG00000080345	replication timing regulatory factor 1 Source HGNC Symbol Acc HGNC 23207
E12	UPFH0371697	ENST00000356810.5	RTEL1	ENSG00000258366	regulator of telomere elongation helicase 1 Source HGNC Symbol Acc HGNC 15888
F01	UPFH0027875	ENST00000312397.10	SART1	ENSG00000175467	spliceosome associated factor 1, recruiter of U4/U6.U5 tri-snRNP Source HGNC Symbol Acc HGNC 10538
F02	UPFH1132681	ENST00000392081.6	SIRT2	ENSG00000068903	sirtuin 2 Source HGNC Symbol Acc HGNC 10886
F03	UPFH0025867	ENST00000601488.5	SIRT6	ENSG00000077463	sirtuin 6 Source HGNC Symbol Acc HGNC 14934
F04	UPFH0164574	ENST00000294008.4	SLX4	ENSG00000188827	SLX4 structure-specific endonuclease subunit Source HGNC Symbol Acc HGNC 23845
F05	UPFH1132840	ENST00000439724.7	SMAD3	ENSG00000166949	SMAD family member 3 Source HGNC Symbol Acc HGNC 6769
F06	UPFH0135837	ENST00000536871.6	SMG6	ENSG00000070366	SMG6, nonsense mediated mRNA decay factor Source HGNC Symbol Acc HGNC 17809
F07	UPFH1132843	ENST00000327443.9	SP1	ENSG00000185591	Sp1 transcription factor Source HGNC Symbol Acc HGNC 11205
F08	UPFH0496314	ENST00000470621.1	SSB	ENSG00000138385	Sjogren syndrome antigen B Source HGNC Symbol Acc HGNC 11316
F09	UPFH0265216	ENST00000477950.1	SUN1	ENSG00000164828	Sad1 and UNC84 domain containing 1 Source HGNC Symbol Acc HGNC 18587
F10	UPFH0572246	ENST00000553984.1	TEP1	ENSG00000129566	telomerase associated protein 1 Source HGNC Symbol Acc HGNC 11726

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFH1132712	ENST00000276603.10	TERF1	ENSG00000147601	telomeric repeat binding factor 1 Source HGNC Symbol Acc HGNC 11728
F12	UPFH0210309	ENST00000567296.6	TERF2	ENSG00000132604	telomeric repeat binding factor 2 Source HGNC Symbol Acc HGNC 11729
G01	UPFH1132713	ENST00000300086.5	TERF2IP	ENSG00000166848	TERF2 interacting protein Source HGNC Symbol Acc HGNC 19246
G02	UPFH0248987	ENST00000310581.9	TERT	ENSG00000164362	telomerase reverse transcriptase Source HGNC Symbol Acc HGNC 11730
G03	UPFH0193430	ENST00000221930.5	TGFB1	ENSG00000105329	transforming growth factor beta 1 Source NCBI gene Acc 7040
G04	UPFH0189537	ENST00000399423.8	TINF2	ENSG00000092330	TERF1 interacting nuclear factor 2 Source HGNC Symbol Acc HGNC 11824
G05	UPFH0321421	ENST00000517989.1	TNKS	ENSG00000173273	tankyrase Source HGNC Symbol Acc HGNC 11941
G06	UPFH1132734	ENST00000371627.5	TNKS2	ENSG00000107854	tankyrase 2 Source HGNC Symbol Acc HGNC 15677
G07	UPFH0565795	ENST00000269305.8	TP53	ENSG00000141510	tumor protein p53 Source HGNC Symbol Acc HGNC 11998
G08	UPFH0035611	ENST00000263801.7	TP53BP1	ENSG00000067369	tumor protein p53 binding protein 1 Source HGNC Symbol Acc HGNC 11999
G09	UPFH0039804	ENST00000534644.6	TPP1	ENSG00000166340	tripeptidyl peptidase 1 Source HGNC Symbol Acc HGNC 2073
G10	UPFH0185634	ENST00000534050.5	WRAP53	ENSG00000141499	WD repeat containing antisense to TP53 Source HGNC Symbol Acc HGNC 25522
G11	UPFH0135513	ENST00000392132.7	XRCC5	ENSG00000079246	X-ray repair cross complementing 5 Source HGNC Symbol Acc HGNC 12833
G12	UPFH0166937	ENST00000360079.7	XRCC6	ENSG00000196419	X-ray repair cross complementing 6 Source HGNC Symbol Acc HGNC 4055
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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