

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

## Human T Cell Anergy & Immune Tolerance

Cat. no. 249955 UPHS-074ZA

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 (96-well): QuantiNova LNA Probe PCR Focus Panel

For the 384-well (4 × 96) PCR panels, genes are present in a staggered format. 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	BTLA	CBLB	CCL3L3	CCR4	CD27	CD28	CD40	CD40LG	CD70	CDK2	CDK4	CMA1
B	CSF1	CSF2	CTLA4	DGKA	DGKZ	EGR2	EGR3	EOMES	FAS	FASLG	FOS	FOXP1
C	FOXP2	FOXP3	GATA3	GZMB	HDAC9	ICAM1	ICOS	IFNG	IL10	IL10RA	IL13	IL15
D	IL17A	IL1A	IL2	IL2RA	IL2RB	IL31	IL4	IL5	IL6	IL7R	ING4	IRF4
E	ITCH	ITGA1	JAK1	JAK3	JUN	LAT	LEP	LGALS3	LTA	MEF2A	NFATC1	NFATC2
F	NFATC3	NFKB1	NHLH2	NOTCH1	PDCD1	PRF1	PRKCG	PTGER2	PTGS2	RNF12B	SELL	STAT3
G	STAT6	TBX21	TGFB1	TNFRSF10A	TNFRSF14	TNFRSF18	TNFRSF4	TNFRSF8	TNFRSF9	TNFSF10	TNFSF14	TNFSF8
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	UPFH0540468	ENST00000383680.4	BTLA	ENSG00000186265	B and T lymphocyte associated Source HGNC Symbol Acc HGNC 21087
A02	UPFH0115907	ENST00000645759.1	CBLB	ENSG00000114423	Cbl proto-oncogene B Source HGNC Symbol Acc HGNC 1542
A03	UPFH0528108	ENST00000619989.1	CCL3L3	ENSG00000276085	C-C motif chemokine ligand 3 like 1 Source HGNC Symbol Acc HGNC 10628
A04	UPFH0179708	ENST00000330953.5	CCR4	ENSG00000183813	C-C motif chemokine receptor 4 Source HGNC Symbol Acc HGNC 1605
A05	UPFH0539172	ENST00000266557.3	CD27	ENSG00000139193	CD27 molecule Source HGNC Symbol Acc HGNC 11922
A06	UPFH0310921	ENST00000458610.6	CD28	ENSG00000178562	CD28 molecule Source HGNC Symbol Acc HGNC 1653
A07	UPFH0317626	ENST00000372285.7	CD40	ENSG00000101017	CD40 molecule Source HGNC Symbol Acc HGNC 11919
A08	UPFH0592498	ENST00000370629.6	CD40LG	ENSG00000102245	CD40 ligand Source HGNC Symbol Acc HGNC 11935
A09	UPFH1132789	ENST00000245903.4	CD70	ENSG00000125726	CD70 molecule Source NCBI gene Acc 970
A10	UPFH1132961	ENST00000266970.9	CDK2	ENSG00000123374	cyclin dependent kinase 2 Source HGNC Symbol Acc HGNC 1771
A11	UPFH0291148	ENST00000549606.5	CDK4	ENSG00000135446	cyclin dependent kinase 4 Source HGNC Symbol Acc HGNC 1773
A12	UPFH0286634	ENST00000206446.4	CMA1	ENSG00000092009	chymase 1 Source HGNC Symbol Acc HGNC 2097
B01	UPFH1132338	ENST00000329608.11	CSF1	ENSG00000184371	colony stimulating factor 1 Source HGNC Symbol Acc HGNC 2432
B02	UPFH1132793	ENST00000296871.4	CSF2	ENSG00000164400	colony stimulating factor 2 Source HGNC Symbol Acc HGNC 2434
B03	UPFH0603710	ENST00000427473.3	CTLA4	ENSG00000163599	cytotoxic T-lymphocyte associated protein 4 Source HGNC Symbol Acc HGNC 2505
B04	UPFH0212943	ENST00000549097.5	DGKA	ENSG00000065357	diacylglycerol kinase alpha Source HGNC Symbol Acc HGNC 2849
B05	UPFH0208539	ENST00000528173.5	DGKZ	ENSG00000149091	diacylglycerol kinase zeta Source HGNC Symbol Acc HGNC 2857
B06	UPFH0318489	ENST00000242480.4	EGR2	ENSG00000122877	early growth response 2 Source HGNC Symbol Acc HGNC 3239
B07	UPFH0445244	ENST00000522910.1	EGR3	ENSG00000179388	early growth response 3 Source HGNC Symbol Acc HGNC 3240
B08	UPFH0615021	ENST00000461503.2	EOMES	ENSG00000163508	eomesodermin Source HGNC Symbol Acc HGNC 3372
B09	UPFH1132395	ENST00000357339.6	FAS	ENSG00000026103	Fas cell surface death receptor Source HGNC Symbol Acc HGNC 11920
B10	UPFH1132396	ENST00000367721.3	FASLG	ENSG00000117560	Fas ligand Source HGNC Symbol Acc HGNC 11936
B11	UPFH1132401	ENST00000555242.1	FOS	ENSG00000170345	Fos proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 3796
B12	UPFH0272801	ENST00000649513.1	FOXP1	ENSG00000114861	forkhead box P1 Source HGNC Symbol Acc HGNC 3823
C01	UPFH0053398	ENST00000350908.9	FOXP2	ENSG00000128573	forkhead box P2 Source HGNC Symbol Acc HGNC 13875
C02	UPFH1132403	ENST00000557224.6	FOXP3	ENSG00000049768	forkhead box P3 Source HGNC Symbol Acc HGNC 6106
C03	UPFH1132416	ENST00000645492.1	GATA3	ENSG00000107485	GATA binding protein 3 Source HGNC Symbol Acc HGNC 4172
C04	UPFH0018541	ENST00000526004.1	GZMB	ENSG00000100453	granzyme B Source HGNC Symbol Acc HGNC 4709
C05	UPFH0538990	ENST00000428307.6	HDAC9	ENSG00000048052	histone deacetylase 9 Source HGNC Symbol Acc HGNC 14065
C06	UPFH1132462	ENST00000264832.8	ICAM1	ENSG00000090339	intercellular adhesion molecule 1 Source HGNC Symbol Acc HGNC 5344
C07	UPFH0092255	ENST00000316386.10	ICOS	ENSG00000163600	inducible T cell costimulator Source HGNC Symbol Acc HGNC 5351
C08	UPFH1132473	ENST00000229135.4	IFNG	ENSG00000111537	interferon gamma Source HGNC Symbol Acc HGNC 5438
C09	UPFH0028177	ENST00000423557.1	IL10	ENSG00000136634	interleukin 10 Source HGNC Symbol Acc HGNC 5962
C10	UPFH0594844	ENST00000227752.7	IL10RA	ENSG00000110324	interleukin 10 receptor subunit alpha Source HGNC Symbol Acc HGNC 5964
		ENST00000617		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	UPFH1132807	259.2	IL13	169194	interleukin 13 Source HGNC Symbol Acc HGNC 5973
C12	UPFH1132873	ENST00000296545.11	IL15	ENSG00000164136	interleukin 15 Source HGNC Symbol Acc HGNC 5977
D01	UPFH0091505	ENST00000648244.1	IL17A	ENSG00000112115	interleukin 17A Source HGNC Symbol Acc HGNC 5981
D02	UPFH0436255	ENST00000263339.3	IL1A	ENSG00000115008	interleukin 1 alpha Source HGNC Symbol Acc HGNC 5991
D03	UPFH0116492	ENST00000226730.4	IL2	ENSG00000109471	interleukin 2 Source HGNC Symbol Acc HGNC 6001
D04	UPFH0323649	ENST00000447847.1	IL2RA	ENSG00000134460	interleukin 2 receptor subunit alpha Source HGNC Symbol Acc HGNC 6008
D05	UPFH0018675	ENST00000445595.1	IL2RB	ENSG00000100385	interleukin 2 receptor subunit beta Source HGNC Symbol Acc HGNC 6009
D06	UPFH0131362	ENST00000377035.1	IL31	ENSG00000204671	interleukin 31 Source HGNC Symbol Acc HGNC 19372
D07	UPFH0226437	ENST00000231449.7	IL4	ENSG00000113520	interleukin 4 Source HGNC Symbol Acc HGNC 6014
D08	UPFH1132811	ENST00000231454.6	IL5	ENSG00000113525	interleukin 5 Source HGNC Symbol Acc HGNC 6016
D09	UPFH1172910	ENST00000258743.10	IL6	ENSG00000136244	interleukin 6 Source HGNC Symbol Acc HGNC 6018
D10	UPFH0314857	ENST00000514217.5	IL7R	ENSG00000168685	interleukin 7 receptor Source HGNC Symbol Acc HGNC 6024
D11	UPFH0569846	ENST00000467678.5	ING4	ENSG00000111653	inhibitor of growth family member 4 Source HGNC Symbol Acc HGNC 19423
D12	UPFH0051290	ENST00000380956.9	IRF4	ENSG00000137265	interferon regulatory factor 4 Source HGNC Symbol Acc HGNC 6119
E01	UPFH0111604	ENST00000486883.5	ITCH	ENSG00000078747	itchy E3 ubiquitin protein ligase Source HGNC Symbol Acc HGNC 13890
E02	UPFH0229386	ENST00000282588.6	ITGA1	ENSG00000213949	integrin subunit alpha 1 Source HGNC Symbol Acc HGNC 6134
E03	UPFH1132963	ENST00000342505.5	JAK1	ENSG00000162434	Janus kinase 1 Source HGNC Symbol Acc HGNC 6190
E04	UPFH0316244	ENST00000458235.5	JAK3	ENSG00000105639	Janus kinase 3 Source HGNC Symbol Acc HGNC 6193
E05	UPFH0569765	ENST00000371222.3	JUN	ENSG00000177606	Jun proto-oncogene, AP-1 transcription factor subunit Acc HGNC 6204
E06	UPFH0374827	ENST00000566270.5	LAT	ENSG00000213658	linker for activation of T cells Source HGNC Symbol Acc HGNC 18874
E07	UPFH1132519	ENST00000308868.5	LEP	ENSG00000174697	leptin Source HGNC Symbol Acc HGNC 6553
E08	UPFH0280613	ENST00000556438.6	LGALS3	ENSG00000131981	galectin 3 Source HGNC Symbol Acc HGNC 6563
E09	UPFH1132824	ENST00000454783.5	LTA	ENSG00000226979	lymphotoxin alpha Source HGNC Symbol Acc HGNC 6709
E10	UPFH0601263	ENST00000354410.9	MEF2A	ENSG00000068305	myocyte enhancer factor 2A Source HGNC Symbol Acc HGNC 6993
E11	UPFH0595445	ENST00000591814.5	NFATC1	ENSG00000131196	nuclear factor of activated T cells 1 Source HGNC Symbol Acc HGNC 7775
E12	UPFH0101128	ENST00000610033.3	NFATC2	ENSG00000101096	nuclear factor of activated T cells 2 Source HGNC Symbol Acc HGNC 7776
F01	UPFH0123113	ENST00000562926.5	NFATC3	ENSG00000072736	nuclear factor of activated T cells 3 Source HGNC Symbol Acc HGNC 7777
F02	UPFH1132828	ENST00000226574.9	NFKB1	ENSG00000109320	nuclear factor kappa B subunit 1 Source HGNC Symbol Acc HGNC 7794
F03	UPFH0384487	ENST00000369506.1	NHLH2	ENSG00000177551	nescient helix-loop-helix 2 Source HGNC Symbol Acc HGNC 7818
F04	UPFH0543837	ENST00000277541.7	NOTCH1	ENSG00000148400	notch 1 Source HGNC Symbol Acc HGNC 7881
F05	UPFH0225866	ENST00000343705.3	PDCD1	ENSG00000188389	programmed cell death 1 Source HGNC Symbol Acc HGNC 8760
F06	UPFH0120472	ENST00000639390.1	PRF1	ENSG00000180644	perforin 1 Source HGNC Symbol Acc HGNC 9360
F07	UPFH0047967	ENST00000474397.5	PRKCG	ENSG00000126583	protein kinase C gamma Source HGNC Symbol Acc HGNC 9402
F08	UPFH0561351	ENST00000245457.6	PTGER2	ENSG00000125384	prostaglandin E receptor 2 Source HGNC Symbol Acc HGNC 9594
F09	UPFH1132642	ENST00000367468.10	PTGS2	ENSG00000073756	prostaglandin-endoperoxide synthase 2 Source HGNC Symbol Acc HGNC 9605
F10	UPFH0613104	ENST00000324342.7	RNF128	ENSG00000133135	ring finger protein 128, E3 ubiquitin protein ligase Source HGNC Symbol Acc HGNC 21153

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFH0444664	ENST00000236147.5	SELL	ENSG00000188404	selectin L Source HGNC Symbol Acc HGNC 10720
F12	UPFH0531262	ENST00000404395.3	STAT3	ENSG00000168610	signal transducer and activator of transcription 3 Source HGNC Symbol Acc HGNC 11364
G01	UPFH1132845	ENST0000055353.2	STAT6	ENSG00000166888	signal transducer and activator of transcription 6 Source HGNC Symbol Acc HGNC 11368
G02	UPFH0331267	ENST00000177694.2	TBX21	ENSG00000073861	T-box 21 Source HGNC Symbol Acc HGNC 11599
G03	UPFH0193430	ENST00000221930.5	TGFB1	ENSG00000105329	transforming growth factor beta 1 Source NCBI gene Acc 7040
G04	UPFH1132888	ENST00000524158.5	TNFRSF10A	ENSG00000104689	TNF receptor superfamily member 10a Source HGNC Symbol Acc HGNC 11904
G05	UPFH0422651	ENST00000426449.5	TNFRSF14	ENSG00000157873	TNF receptor superfamily member 14 Source HGNC Symbol Acc HGNC 11912
G06	UPFH0526059	ENST00000379265.5	TNFRSF18	ENSG00000186891	TNF receptor superfamily member 18 Source HGNC Symbol Acc HGNC 11914
G07	UPFH0433269	ENST00000497869.5	TNFRSF4	ENSG00000186827	TNF receptor superfamily member 4 Source HGNC Symbol Acc HGNC 11918
G08	UPFH0288248	ENST00000479933.2	TNFRSF8	ENSG00000120949	TNF receptor superfamily member 8 Source HGNC Symbol Acc HGNC 11923
G09	UPFH0607162	ENST00000615230.4	TNFRSF9	ENSG00000049249	TNF receptor superfamily member 9 Source HGNC Symbol Acc HGNC 11924
G10	UPFH1132733	ENST00000241261.7	TNFSF10	ENSG00000121858	TNF superfamily member 10 Source HGNC Symbol Acc HGNC 11925
G11	UPFH1132854	ENST00000599359.1	TNFSF14	ENSG00000125735	TNF superfamily member 14 Source HGNC Symbol Acc HGNC 11930
G12	UPFH0562560	ENST00000223795.2	TNFSF8	ENSG00000106952	TNF superfamily member 8 Source HGNC Symbol Acc HGNC 11938
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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