

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

## Mouse T Cell Anergy & Immune Tolerance

Cat. no. 249955 UPMM-074ZR

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	Btla	Cblb	Ccl3	Ccr4	Cd27	Cd28	Cd40	Cd40lg	Cd70	Cdk2	Cdk4	Cma1
B	Csf1	Csf2	Ctla4	Dgka	Dgkz	Egr2	Egr3	Eomes	Fos	Fosl	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	Itpa1	Jak1	Jak3	Jun	Lat	Lep	Lgals3	Lta	Mef2a	Nfatc1	Nfatc2
F	Nfatc3	Nrkb1	Nhlh2	Notch1	Pdcd1	Pf1	Prkcg	Ptger2	Ptgs2	Rnf128	Sell	Stat3
G	Stat6	Tbx21	Tgfb1	Tnfrsf10b	Tnfrsf14	Tnfrsf18	Tnfrsf4	Tnfrsf8	Tnfrsf9	Tnfrsf10	Tnfrsf14	Tnfrsf8
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	QIC	QIC	QIC	PPC	PPC	PPC

## Gene table: QuantiNova LNA Probe PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	UPFM082466 9	ENSMUST00000 102802.9	Btla	ENSMUSG00 000052013	B and T lymphocyte associated Source MGI Symbol Acc MGI 2658978
A02	UPFM086952 7	ENSMUST00000 227879.1	Cblb	ENSMUSG00 000022637	Casitas B-lineage lymphoma b Source MGI Symbol Acc MGI 2146430
A03	UPFM100418 5	ENSMUST00000 001008.5	Ccl3	ENSMUSG00 000000982	chemokine (C-C motif) ligand 3 Source MGI Symbol Acc MGI 98260
A04	UPFM092149 8	ENSMUST00000 054414.4	Ccr4	ENSMUSG00 000047898	chemokine (C-C motif) receptor 4 Source MGI Symbol Acc MGI 107824
A05	UPFM074378 3	ENSMUST00000 112282.2	Cd27	ENSMUSG00 000030336	CD27 antigen Source MGI Symbol Acc MGI 88326
A06	UPFM073617 9	ENSMUST00000 153207.1	Cd28	ENSMUSG00 000026012	CD28 antigen Source MGI Symbol Acc MGI 88327
A07	UPFM072215 7	ENSMUST00000 153105.1	Cd40	ENSMUSG00 000017652	CD40 antigen Source MGI Symbol Acc MGI 88336
A08	UPFM091836 0	ENSMUST00000 033466.1	Cd40lg	ENSMUSG00 000031132	CD40 ligand Source MGI Symbol Acc MGI 88337
A09	UPFM100648 5	ENSMUST00000 019633.7	Cd70	ENSMUSG00 000019489	CD70 antigen Source MGI Symbol Acc MGI 1195273
A10	UPFM089823 9	ENSMUST00000 219601.1	Cdk2	ENSMUSG00 000025358	cyclin-dependent kinase 2 Source MGI Symbol Acc MGI 104772
A11	UPFM094816 9	ENSMUST00000 140254.7	Cdk4	ENSMUSG00 000006728	cyclin-dependent kinase 4 Source MGI Symbol Acc MGI 88357
A12	UPFM066899 7	ENSMUST00000 022834.6	Cma1	ENSMUSG00 000022225	chymase 1, mast cell Source MGI Symbol Acc MGI 96941
B01	UPFM064393 3	ENSMUST00000 155557.1	Csf1	ENSMUSG00 000014599	colony stimulating factor 1 (macrophage) Source MGI Symbol Acc MGI 1339753
B02	UPFM064031 3	ENSMUST00000 019060.5	Csf2	ENSMUSG00 000018916	colony stimulating factor 2 (granulocyte-macrophage) Source MGI Symbol Acc MGI 1339752
B03	UPFM090439 4	ENSMUST00000 027164.8	Ctla4	ENSMUSG00 000026011	cytotoxic T-lymphocyte-associated protein 4 Source MGI Symbol Acc MGI 88556
B04	UPFM071611 0	ENSMUST00000 026414.8	Dgka	ENSMUSG00 000025357	diacylglycerol kinase, alpha Source MGI Symbol Acc MGI 102952
B05	UPFM079647 4	ENSMUST00000 111303.1	Dgkz	ENSMUSG00 000040479	diacylglycerol kinase zeta Source MGI Symbol Acc MGI 1278339
B06	UPFM068711 9	ENSMUST00000 145936.1	Egr2	ENSMUSG00 000037868	early growth response 2 Source MGI Symbol Acc MGI 95296
B07	UPFM081883 4	ENSMUST00000 225200.1	Egr3	ENSMUSG00 000033730	early growth response 3 Source MGI Symbol Acc MGI 1306780
B08	UPFM098977 3	ENSMUST00000 035020.14	Eomes	ENSMUSG00 000032446	eomesodermin Source MGI Symbol Acc MGI 1201683
B09	UPFM099578 7	ENSMUST00000 235709.1	Fas	ENSMUSG00 000024778	Fas (TNF receptor superfamily member 6) Source MGI Symbol Acc MGI 95484
B10	UPFM074944 2	ENSMUST00000 193648.1	FasL	ENSMUSG00 000000817	Fas ligand (TNF superfamily, member 6) Source MGI Symbol Acc MGI 99255
B11	UPFM076456 3	ENSMUST00000 136122.7	Fos	ENSMUSG00 000021250	FBJ osteosarcoma oncogene Source MGI Symbol Acc MGI 95574
B12	UPFM082967 5	ENSMUST00000 113329.9	Foxp1	ENSMUSG00 000030067	forkhead box P1 Source MGI Symbol Acc MGI 1914004
C01	UPFM074689 5	ENSMUST00000 115469.7	Foxp2	ENSMUSG00 000029563	forkhead box P2 Source MGI Symbol Acc MGI 2148705
C02	UPFM072970 2	ENSMUST00000 234479.1	Foxp3	ENSMUSG00 000039521	forkhead box P3 Source MGI Symbol Acc MGI 1891436
C03	UPFM070391 0	ENSMUST00000 151456.1	Gata3	ENSMUSG00 000015619	GATA binding protein 3 Source MGI Symbol Acc MGI 95663
C04	UPFM076196 3	ENSMUST00000 015581.5	Gzmb	ENSMUSG00 000015437	granzyme B Source MGI Symbol Acc MGI 109267
C05	UPFM093260 2	ENSMUST00000 209750.1	Hdac9	ENSMUSG00 000004698	histone deacetylase 9 Source MGI Symbol Acc MGI 1931221
C06	UPFM084326 4	ENSMUST00000 215003.1	Icam1	ENSMUSG00 000037405	intercellular adhesion molecule 1 Source MGI Symbol Acc MGI 96392
C07	UPFM096311 9	ENSMUST00000 102827.3	Icos	ENSMUSG00 000026009	inducible T cell co-stimulator Source MGI Symbol Acc MGI 1858745
C08	UPFM117295 0	ENSMUST00000 068592.4	Iifng	ENSMUSG00 000055170	interferon gamma Source MGI Symbol Acc MGI 107656
C09	UPFM117295 1	ENSMUST00000 016673.5	Il10	ENSMUSG00 000016529	interleukin 10 Source MGI Symbol Acc MGI 96537
C10	UPFM066700 7	ENSMUST00000 176222.1	Il10ra	ENSMUSG00 000032089	interleukin 10 receptor, alpha Source MGI Symbol Acc MGI 96538
	UPFM117295	ENSMUST00000		ENSMUSG00	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	2	020650.1	Il13	000020383	interleukin 13 Source MGI Symbol Acc MGI 96541
C12	UPFM0906756	ENSMUST00000209687.1	Il15	ENSMUSG0000031712	interleukin 15 Source MGI Symbol Acc MGI 103014
D01	UPFM0881815	ENSMUST0000027061.4	Il17a	ENSMUSG0000025929	interleukin 17A Source MGI Symbol Acc MGI 107364
D02	UPFM0903887	ENSMUST0000028882.1	Il1a	ENSMUSG0000027399	interleukin 1 alpha Source MGI Symbol Acc MGI 96542
D03	UPFM0822229	ENSMUST0000029275.5	Il2	ENSMUSG0000027720	interleukin 2 Source MGI Symbol Acc MGI 96548
D04	UPFM0922346	ENSMUST0000028111.5	Il2ra	ENSMUSG0000026770	interleukin 2 receptor, alpha chain Source MGI Symbol Acc MGI 96549
D05	UPFM0762222	ENSMUST00000163494.2	Il2rb	ENSMUSG0000068227	interleukin 2 receptor, beta chain Source MGI Symbol Acc MGI 96550
D06	UPFM0966432	ENSMUST00000198463.1	Il31	ENSMUSG0000029437	interleukin 31 Source MGI Symbol Acc MGI 1923649
D07	UPFM0959251	ENSMUST00000150568.7	Il4	ENSMUSG0000000869	interleukin 4 Source MGI Symbol Acc MGI 96556
D08	UPFM0664979	ENSMUST00000048605.2	Il5	ENSMUSG0000036117	interleukin 5 Source MGI Symbol Acc MGI 96557
D09	UPFM0729099	ENSMUST00000195978.4	Il6	ENSMUSG0000025746	interleukin 6 Source MGI Symbol Acc MGI 96559
D10	UPFM0838873	ENSMUST00000228782.1	Il7r	ENSMUSG0000003882	interleukin 7 receptor Source MGI Symbol Acc MGI 96562
D11	UPFM0759019	ENSMUST00000152574.7	Ing4	ENSMUSG0000030330	inhibitor of growth family, member 4 Source MGI Symbol Acc MGI 107307
D12	UPFM0736498	ENSMUST00000110307.2	Irf4	ENSMUSG0000021356	interferon regulatory factor 4 Source MGI Symbol Acc MGI 1096873
E01	UPFM0622008	ENSMUST00000123497.1	Itch	ENSMUSG0000027598	itchy, E3 ubiquitin protein ligase Source MGI Symbol Acc MGI 1202301
E02	UPFM0900259	ENSMUST00000224493.1	Itga1	ENSMUSG0000042284	integrin alpha 1 Source MGI Symbol Acc MGI 96599
E03	UPFM0734434	ENSMUST00000155328.7	Jak1	ENSMUSG0000028530	Janus kinase 1 Source MGI Symbol Acc MGI 96628
E04	UPFM0978042	ENSMUST00000110012.1	Jak3	ENSMUSG0000031805	Janus kinase 3 Source MGI Symbol Acc MGI 99928
E05	UPFM0975216	ENSMUST00000107094.1	Jun	ENSMUSG0000052684	jun proto-oncogene Source MGI Symbol Acc MGI 96646
E06	UPFM0783907	ENSMUST00000206793.1	Lat	ENSMUSG0000030742	linker for activation of T cells Source MGI Symbol Acc MGI 1342293
E07	UPFM0686147	ENSMUST00000169505.1	Lep	ENSMUSG0000059201	leptin Source MGI Symbol Acc MGI 104663
E08	UPFM0841083	ENSMUST00000146468.3	Lgals3	ENSMUSG0000050335	lectin, galactose binding, soluble 3 Source MGI Symbol Acc MGI 96778
E09	UPFM0657079	ENSMUST0000025266.5	Lta	ENSMUSG0000024402	lymphotoxin A Source MGI Symbol Acc MGI 104797
E10	UPFM0949479	ENSMUST00000156690.7	Mef2a	ENSMUSG0000030557	myocyte enhancer factor 2A Source MGI Symbol Acc MGI 99532
E11	UPFM0955881	ENSMUST00000170905.8	Nfatc1	ENSMUSG0000033016	nuclear factor of activated T cells, cytoplasmic, calcineurin dependent 1 Source MGI Symbol Acc MGI 102469
E12	UPFM0805682	ENSMUST00000099067.9	Nfatc2	ENSMUSG0000027544	nuclear factor of activated T cells, cytoplasmic, calcineurin dependent 2 Source MGI Symbol Acc MGI 102463
F01	UPFM0660897	ENSMUST00000109308.2	Nfatc3	ENSMUSG0000031902	nuclear factor of activated T cells, cytoplasmic, calcineurin dependent 3 Source MGI Symbol Acc MGI 103296
F02	UPFM0987587	ENSMUST0000029812.13	Nfkb1	ENSMUSG0000028163	nuclear factor of kappa light polypeptide gene enhancer in B cells 1, p105 Source MGI Symbol Acc MGI 97312
F03	UPFM0941678	ENSMUST00000198675.1	Nhlh2	ENSMUSG0000048540	nescient helix loop helix 2 Source MGI Symbol Acc MGI 97324
F04	UPFM0795987	ENSMUST00000126872.7	Notch1	ENSMUSG0000026923	notch 1 Source MGI Symbol Acc MGI 97363
F05	UPFM0848177	ENSMUST0000027507.7	Pdcd1	ENSMUSG0000026285	programmed cell death 1 Source MGI Symbol Acc MGI 104879
F06	UPFM0634592	ENSMUST00000035419.6	Prf1	ENSMUSG0000037202	perforin 1 (pore forming protein) Source MGI Symbol Acc MGI 97551
F07	UPFM0659850	ENSMUST00000100301.10	Prkcg	ENSMUSG0000078816	protein kinase C, gamma Source MGI Symbol Acc MGI 97597
F08	UPFM0811430	ENSMUST00000046891.5	Ptger2	ENSMUSG0000037759	prostaglandin E receptor 2 (subtype EP2) Source MGI Symbol Acc MGI 97794
F09	UPFM1004492	ENSMUST00000190784.1	Ptgs2	ENSMUSG0000032487	prostaglandin-endoperoxide synthase 2 Source MGI Symbol Acc MGI 97798
F10	UPFM0909794	ENSMUST00000113026.1	Rnf128	ENSMUSG0000031438	ring finger protein 128 Source MGI Symbol Acc MGI 1914139

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFM077751 1	ENSMUST00000 097491.9	Sell	ENSMUSG00 000026581	selectin, lymphocyte Source MGI Symbol Acc MGI 98279
F12	UPFM098484 5	ENSMUST00000 092671.11	Stat3	ENSMUSG00 000004040	signal transducer and activator of transcription 3 Source MGI Symbol Acc MGI 103038
G01	UPFM075580 6	ENSMUST00000 092074.11	Stat6	ENSMUSG00 000002147	signal transducer and activator of transcription 6 Source MGI Symbol Acc MGI 103034
G02	UPFM101162 2	ENSMUST00000 001484.2	Tbx21	ENSMUSG00 000001444	T-box 21 Source MGI Symbol Acc MGI 1888984
G03	UPFM066688 0	ENSMUST00000 171757.1	Tgfb1	ENSMUSG00 000002603	transforming growth factor, beta 1 Source MGI Symbol Acc MGI 98725
G04	UPFM064695 8	ENSMUST00000 022663.6	Tnfrsf10b	ENSMUSG00 000022074	tumor necrosis factor receptor superfamily, member 10b Source MGI Symbol Acc MGI 1341090
G05	UPFM099845 8	ENSMUST00000 152687.7	Tnfrsf14	ENSMUSG00 000042333	tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator) Source MGI Symbol Acc MGI 2675303
G06	UPFM094370 4	ENSMUST00000 141260.7	Tnfrsf18	ENSMUSG00 000041954	tumor necrosis factor receptor superfamily, member 18 Source MGI Symbol Acc MGI 894675
G07	UPFM097732 6	ENSMUST00000 127377.1	Tnfrsf4	ENSMUSG00 000029075	tumor necrosis factor receptor superfamily, member 4 Source MGI Symbol Acc MGI 104512
G08	UPFM096867 3	ENSMUST00000 123027.1	Tnfrsf8	ENSMUSG00 000028602	tumor necrosis factor receptor superfamily, member 8 Source MGI Symbol Acc MGI 99908
G09	UPFM097960 9	ENSMUST00000 105672.9	Tnfrsf9	ENSMUSG00 000028965	tumor necrosis factor receptor superfamily, member 9 Source MGI Symbol Acc MGI 1101059
G10	UPFM068209 9	ENSMUST00000 174840.1	Tnfsf10	ENSMUSG00 000039304	tumor necrosis factor (ligand) superfamily, member 10 Source MGI Symbol Acc MGI 107414
G11	UPFM117296 5	ENSMUST00000 005976.7	Tnfsf14	ENSMUSG00 000005824	tumor necrosis factor (ligand) superfamily, member 14 Source MGI Symbol Acc MGI 1355317
G12	UPFM097784 5	ENSMUST00000 030047.2	Tnfsf8	ENSMUSG00 000028362	tumor necrosis factor (ligand) superfamily, member 8 Source MGI Symbol Acc MGI 88328
H01	UPFM113294 6	ENSMUST00000 163829.1	Actb	ENSMUSG00 000029580	actin, beta Source MGI Symbol Acc MGI 87904
H02	UPFM113294 7	ENSMUST00000 102476.4	B2m	ENSMUSG00 000060802	beta-2 microglobulin Source MGI Symbol Acc MGI 88127
H03	UPFM113294 8	ENSMUST00000 117757.8	Gapdh	ENSMUSG00 000057666	glyceraldehyde-3-phosphate dehydrogenase Source MGI Symbol Acc MGI 95640
H04	UPFM113294 9	ENSMUST00000 026613.13	Gusb	ENSMUSG00 000025534	glucuronidase, beta Source MGI Symbol Acc MGI 95872
H05	UPFM113295 0	ENSMUST00000 166469.7	Hsp90ab1	ENSMUSG00 000023944	heat shock protein 90 alpha (cytosolic), class B member 1 Source MGI Symbol Acc MGI 96247
H06	UPFM112660 9	UPL_MGDC	MGDC	UPL_MGDC	Mouse 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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