

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

## Human Mitochondrial Energy Metabolism

Cat. no. 249955 UPHS-008ZA

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	ATP12A	ATP4A	ATP4B	ATP5F1A	ATP5F1B	ATP5F1C	ATP5P8	ATP5MC1	ATP5MC2	ATP5MC3	ATP5PD	ATP5ME
B	ATP5PF	ATP5MF	ATP5MG	ATP5PO	ATP6V0A2	ATP6V0D2	ATP6V1C2	ATP6V1E2	ATP6V1G3	BCS1L	COX4I1	COX4I2
C	COX5A	COX5B	COX6A1	COX6A2	COX6B1	COX6B2	COX6C	COX7A2	COX7A2L	COX7B	COX8A	COX8C
D	CYC1	LHPP	NDUFA1	NDUFA10	NDUFA11	NDUFA2	NDUFA3	NDUFA4	NDUFA5	NDUFA6	NDUFA7	NDUFA8
E	NDUFAB1	NDUFB10	NDUFB2	NDUFB3	NDUFB4	NDUFB5	NDUFB6	NDUFB7	NDUFB8	NDUFB9	NDUFC1	NDUFC2
F	NDUFS1	NDUFS2	NDUFS3	NDUFS4	NDUFS5	NDUFS6	NDUFS7	NDUFS8	NDUFV1	NDUFV2	NDUFV3	OXA1L
G	PPA1	PPA2	SDHA	SDHB	SDHC	SDHD	UQCRC1	UQCRC1	UQCRC2	UQCRC2	UQCRC2	UQCRC2
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	QIC	QIC	QIC	QIC	PPC	PPC

## Gene table: QuantiNova LNA Probe PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	UPFH0002432	ENST00000381946.4	ATP12A	ENSG00000075673	ATPase H+/K+ transporting non-gastric alpha2 subunit Source HGNC Symbol Acc HGNC 13816
A02	UPFH0221723	ENST00000262623.3	ATP4A	ENSG00000105675	ATPase H+/K+ transporting subunit alpha Source HGNC Symbol Acc HGNC 819
A03	UPFH0201373	ENST00000335288.4	ATP4B	ENSG00000186009	ATPase H+/K+ transporting subunit beta Source HGNC Symbol Acc HGNC 820
A04	UPFH1132254	ENST00000590406.5	ATP5F1A	ENSG00000152234	ATP synthase F1 subunit alpha Source HGNC Symbol Acc HGNC 823
A05	UPFH0080911	ENST00000547250.5	ATP5F1B	ENSG00000110955	ATP synthase F1 subunit beta Source HGNC Symbol Acc HGNC 830
A06	UPFH0196265	ENST00000460820.6	ATP5F1C	ENSG00000165629	ATP synthase F1 subunit gamma Source HGNC Symbol Acc HGNC 833
A07	UPFH1132255	ENST00000369722.8	ATP5PB	ENSG00000116459	ATP synthase peripheral stalk-membrane subunit b Source HGNC Symbol Acc HGNC 840
A08	UPFH1132256	ENST00000393366.7	ATP5MC1	ENSG00000159199	ATP synthase membrane subunit c locus 1 Source HGNC Symbol Acc HGNC 841
A09	UPFH0315851	ENST00000394349.8	ATP5MC2	ENSG00000135390	ATP synthase membrane subunit c locus 2 Source HGNC Symbol Acc HGNC 842
A10	UPFH0603531	ENST00000284727.8	ATP5MC3	ENSG00000154518	ATP synthase membrane subunit c locus 3 Source HGNC Symbol Acc HGNC 843
A11	UPFH0576037	ENST00000301587.9	ATP5PD	ENSG00000167863	ATP synthase peripheral stalk subunit d Source HGNC Symbol Acc HGNC 845
A12	UPFH1132257	ENST00000304312.5	ATP5ME	ENSG00000169020	ATP synthase membrane subunit e Source HGNC Symbol Acc HGNC 846
B01	UPFH0044787	ENST00000400093.3	ATP5PF	ENSG00000154723	ATP synthase peripheral stalk subunit F6 Source HGNC Symbol Acc HGNC 847
B02	UPFH0161947	ENST00000292475.7	ATP5MF	ENSG00000241468	ATP synthase membrane subunit f Source HGNC Symbol Acc HGNC 848
B03	UPFH1132258	ENST00000300688.8	ATP5MG	ENSG00000167283	ATP synthase membrane subunit g Source HGNC Symbol Acc HGNC 14247
B04	UPFH0311242	ENST00000418933.1	ATP5PO	ENSG00000241837	ATP synthase peripheral stalk subunit OSCP Source HGNC Symbol Acc HGNC 850
B05	UPFH1132259	ENST00000504192.2	ATP6V0A2	ENSG00000185344	ATPase H+ transporting V0 subunit a2 Source HGNC Symbol Acc HGNC 18481
B06	UPFH0256084	ENST00000521564.1	ATP6V0D2	ENSG00000147614	ATPase H+ transporting V0 subunit d2 Source HGNC Symbol Acc HGNC 18266
B07	UPFH0063535	ENST00000381661.3	ATP6V1C2	ENSG00000143882	ATPase H+ transporting V1 subunit C2 Source HGNC Symbol Acc HGNC 18264
B08	UPFH0584635	ENST00000524249.5	ATP6V1E2	ENSG00000250565	ATPase H+ transporting V1 subunit E2 Source HGNC Symbol Acc HGNC 18125
B09	UPFH0292913	ENST00000309309.11	ATP6V1G3	ENSG00000151418	ATPase H+ transporting V1 subunit G3 Source HGNC Symbol Acc HGNC 18265
B10	UPFH0524130	ENST00000359273.7	BCS1L	ENSG00000074582	BCS1 homolog, ubiquinol-cytochrome c reductase complex chaperone Source HGNC Symbol Acc HGNC 1020
B11	UPFH0591095	ENST00000253452.6	COX4I1	ENSG00000131143	cytochrome c oxidase subunit 4I1 Source HGNC Symbol Acc HGNC 2265
B12	UPFH1172905	ENST00000376075.3	COX4I2	ENSG00000131055	cytochrome c oxidase subunit 4I2 Source HGNC Symbol Acc HGNC 16232
C01	UPFH1132328	ENST00000322347.11	COX5A	ENSG00000178741	cytochrome c oxidase subunit 5A Source HGNC Symbol Acc HGNC 2267
C02	UPFH0343799	ENST00000258424.2	COX5B	ENSG00000135940	cytochrome c oxidase subunit 5B Source HGNC Symbol Acc HGNC 2269
C03	UPFH1132329	ENST00000229379.3	COX6A1	ENSG00000111775	cytochrome c oxidase subunit 6A1 Source HGNC Symbol Acc HGNC 2277
C04	UPFH1125508	ENST00000565462.2	COX6A2	ENSG00000156885	cytochrome c oxidase subunit 6A2 Source HGNC Symbol Acc HGNC 2279
C05	UPFH0367162	ENST00000246554.7	COX6B1	ENSG00000126267	cytochrome c oxidase subunit 6B1 Source HGNC Symbol Acc HGNC 2280
C06	UPFH0060372	ENST00000588572.6	COX6B2	ENSG00000160471	cytochrome c oxidase subunit 6B2 Source HGNC Symbol Acc HGNC 24380
C07	UPFH1132330	ENST00000524245.5	COX6C	ENSG00000164919	cytochrome c oxidase subunit 6C Source HGNC Symbol Acc HGNC 2285
C08	UPFH0311608	ENST00000370089.6	COX7A2	ENSG00000112695	cytochrome c oxidase subunit 7A2 Source HGNC Symbol Acc HGNC 2288
C09	UPFH1132331	ENST00000378669.5	COX7A2L	ENSG00000115944	cytochrome c oxidase subunit 7A2 like Source HGNC Symbol Acc HGNC 2289
C10	UPFH1132332	ENST00000481445.1	COX7B	ENSG00000131174	cytochrome c oxidase subunit 7B Source HGNC Symbol Acc HGNC 2291
		ENST00000314		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	UPFH1132333	133.4	COX8A	176340	cytochrome c oxidase subunit 8A Source HGNC Symbol Acc HGNC 2294
C12	UPFH1172906	ENST00000342 144.2	COX8C	ENSG00000 187581	cytochrome c oxidase subunit 8C Source HGNC Symbol Acc HGNC 24382
D01	UPFH1132351	ENST00000318 911.5	CYC1	ENSG00000 179091	cytochrome c1 Source HGNC Symbol Acc HGNC 2579
D02	UPFH0088920	ENST00000368 839.1	LHPP	ENSG00000 107902	phospholysine phosphohistidine inorganic pyrophosphate phosphatase Source HGNC Symbol Acc HGNC 30042
D03	UPFH1132568	ENST00000371 437.5	NDUFA1	ENSG00000 125356	NADH ubiquinone oxidoreductase subunit A1 Source HGNC Symbol Acc HGNC 7683
D04	UPFH1132569	ENST00000252 711.7	NDUFA10	ENSG00000 130414	NADH ubiquinone oxidoreductase subunit A10 Source HGNC Symbol Acc HGNC 7684
D05	UPFH0255867	ENST00000308 961.4	NDUFA11	ENSG00000 174886	NADH ubiquinone oxidoreductase subunit A11 Source HGNC Symbol Acc HGNC 20371
D06	UPFH1132570	ENST00000252 102.8	NDUFA2	ENSG00000 131495	NADH ubiquinone oxidoreductase subunit A2 Source HGNC Symbol Acc HGNC 7685
D07	UPFH1132571	ENST00000391 764.7	NDUFA3	ENSG00000 170906	NADH ubiquinone oxidoreductase subunit A3 Source HGNC Symbol Acc HGNC 7686
D08	UPFH1132572	ENST00000339 600.6	NDUFA4	ENSG00000 189043	NDUFA4, mitochondrial complex associated Source HGNC Symbol Acc HGNC 7687
D09	UPFH1132573	ENST00000378 795.8	NDUFA5	ENSG00000 128609	NADH ubiquinone oxidoreductase subunit A5 Source HGNC Symbol Acc HGNC 7688
D10	UPFH1132574	ENST00000617 763.1	NDUFA6	ENSG00000 184983	NADH ubiquinone oxidoreductase subunit A6 Source HGNC Symbol Acc HGNC 7690
D11	UPFH0459491	ENST00000593 729.5	NDUFA7	ENSG00000 267855	NADH ubiquinone oxidoreductase subunit A7 Source HGNC Symbol Acc HGNC 7691
D12	UPFH1132575	ENST00000373 768.4	NDUFA8	ENSG00000 119421	NADH ubiquinone oxidoreductase subunit A8 Source HGNC Symbol Acc HGNC 7692
E01	UPFH0240149	ENST00000567 761.1	NDUFAB1	ENSG00000 004779	NADH ubiquinone oxidoreductase subunit AB1 Source HGNC Symbol Acc HGNC 7694
E02	UPFH1132576	ENST00000569 148.1	NDUFB10	ENSG00000 140990	NADH ubiquinone oxidoreductase subunit B10 Source HGNC Symbol Acc HGNC 7696
E03	UPFH1132577	ENST00000475 276.1	NDUFB2	ENSG00000 090266	NADH ubiquinone oxidoreductase subunit B2 Source HGNC Symbol Acc HGNC 7697
E04	UPFH0518387	ENST00000237 889.9	NDUFB3	ENSG00000 119013	NADH ubiquinone oxidoreductase subunit B3 Source HGNC Symbol Acc HGNC 7698
E05	UPFH1132578	ENST00000184 266.3	NDUFB4	ENSG00000 065518	NADH ubiquinone oxidoreductase subunit B4 Source HGNC Symbol Acc HGNC 7699
E06	UPFH1132579	ENST00000259 037.8	NDUFB5	ENSG00000 136521	NADH ubiquinone oxidoreductase subunit B5 Source HGNC Symbol Acc HGNC 7700
E07	UPFH0211368	ENST00000366 466.5	NDUFB6	ENSG00000 165264	NADH ubiquinone oxidoreductase subunit B6 Source HGNC Symbol Acc HGNC 7701
E08	UPFH1132580	ENST00000215 565.3	NDUFB7	ENSG00000 099795	NADH ubiquinone oxidoreductase subunit B7 Source HGNC Symbol Acc HGNC 7702
E09	UPFH1132581	ENST00000299 166.9	NDUFB8	ENSG00000 166136	NADH ubiquinone oxidoreductase subunit B8 Source HGNC Symbol Acc HGNC 7703
E10	UPFH1132582	ENST00000606 244.2	NDUFB9	ENSG00000 147684	NADH ubiquinone oxidoreductase subunit B9 Source HGNC Symbol Acc HGNC 7704
E11	UPFH0025469	ENST00000505 036.5	NDUFC1	ENSG00000 109390	NADH ubiquinone oxidoreductase subunit C1 Source HGNC Symbol Acc HGNC 7705
E12	UPFH1132583	ENST00000281 031.5	NDUFC2	ENSG00000 151366	NADH ubiquinone oxidoreductase subunit C2 Source HGNC Symbol Acc HGNC 7706
F01	UPFH1132879	ENST00000455 934.6	NDUFS1	ENSG00000 023228	NADH ubiquinone oxidoreductase core subunit S1 Source HGNC Symbol Acc HGNC 7707
F02	UPFH0201628	ENST00000483 804.5	NDUFS2	ENSG00000 158864	NADH ubiquinone oxidoreductase core subunit S2 Source HGNC Symbol Acc HGNC 7708
F03	UPFH1132584	ENST00000263 774.9	NDUFS3	ENSG00000 213619	NADH ubiquinone oxidoreductase core subunit S3 Source HGNC Symbol Acc HGNC 7710
F04	UPFH1132585	ENST00000296 684.10	NDUFS4	ENSG00000 164258	NADH ubiquinone oxidoreductase subunit S4 Source HGNC Symbol Acc HGNC 7711
F05	UPFH1172911	ENST00000372 967.3	NDUFS5	ENSG00000 168653	NADH ubiquinone oxidoreductase subunit S5 Source HGNC Symbol Acc HGNC 7712
F06	UPFH0332310	ENST00000469 176.1	NDUFS6	ENSG00000 145494	NADH ubiquinone oxidoreductase subunit S6 Source HGNC Symbol Acc HGNC 7713
F07	UPFH1132586	ENST00000313 408.11	NDUFS7	ENSG00000 115286	NADH ubiquinone oxidoreductase core subunit S7 Source HGNC Symbol Acc HGNC 7714
F08	UPFH1132587	ENST00000526 339.5	NDUFS8	ENSG00000 110717	NADH ubiquinone oxidoreductase core subunit S8 Source HGNC Symbol Acc HGNC 7715
F09	UPFH1132588	ENST00000533 075.5	NDUFV1	ENSG00000 167792	NADH ubiquinone oxidoreductase core subunit V1 Source HGNC Symbol Acc HGNC 7716
F10	UPFH1132589	ENST00000318 388.11	NDUFV2	ENSG00000 178127	NADH ubiquinone oxidoreductase core subunit V2 Source HGNC Symbol Acc HGNC 7717

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFH1132590	ENST00000354250.7	NDUFV3	ENSG00000160194	NADH ubiquinone oxidoreductase subunit V3 Source HGNC Symbol Acc HGNC 7719
F12	UPFH1132604	ENST00000612549.5	OXA1L	ENSG00000155463	OXA1L, mitochondrial inner membrane protein Source HGNC Symbol Acc HGNC 8526
G01	UPFH1132627	ENST00000373232.8	PPA1	ENSG00000180817	pyrophosphatase (inorganic) 1 Source HGNC Symbol Acc HGNC 9226
G02	UPFH1132628	ENST00000348706.9	PPA2	ENSG00000138777	pyrophosphatase (inorganic) 2 Source HGNC Symbol Acc HGNC 28883
G03	UPFH1132667	ENST00000504309.5	SDHA	ENSG00000073578	succinate dehydrogenase complex flavoprotein subunit A Source HGNC Symbol Acc HGNC 10680
G04	UPFH0440600	ENST00000375499.7	SDHB	ENSG00000117118	succinate dehydrogenase complex iron sulfur subunit B Source HGNC Symbol Acc HGNC 10681
G05	UPFH0461332	ENST00000367975.6	SDHC	ENSG00000143252	succinate dehydrogenase complex subunit C Source HGNC Symbol Acc HGNC 10682
G06	UPFH1132668	ENST00000528048.5	SDHD	ENSG00000204370	succinate dehydrogenase complex subunit D Source HGNC Symbol Acc HGNC 10683
G07	UPFH1132750	ENST00000585671.2	UQCR11	ENSG00000127540	ubiquinol-cytochrome c reductase, complex III subunit XI Source HGNC Symbol Acc HGNC 30862
G08	UPFH1132751	ENST00000203407.6	UQCRC1	ENSG00000010256	ubiquinol-cytochrome c reductase core protein 1 Source HGNC Symbol Acc HGNC 12585
G09	UPFH1132976	ENST00000561553.5	UQCRC2	ENSG00000140740	ubiquinol-cytochrome c reductase core protein 2 Source HGNC Symbol Acc HGNC 12586
G10	UPFH1132752	ENST00000304863.6	UQCRCF1	ENSG00000169021	ubiquinol-cytochrome c reductase, Rieske iron-sulfur polypeptide 1 Source HGNC Symbol Acc HGNC 12587
G11	UPFH0078690	ENST00000489056.5	UQCRH	ENSG00000173660	ubiquinol-cytochrome c reductase hinge protein Source HGNC Symbol Acc HGNC 12590
G12	UPFH0209205	ENST00000378667.1	UQCRQ	ENSG00000164405	ubiquinol-cytochrome c reductase complex III subunit VII Source HGNC Symbol Acc HGNC 29594
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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