

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

## Human Amino Acid Metabolism I

Cat. no. 249955 UPHS-129ZA

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	AADAT	AANAT	AOC1	ACADM	ACAT1	ACMSD	ACY1	ADI1	AGMAT	AHCY	ALDH18A1	ALDH4A1
B	ALDH9A1	AMD1	AOX1	APIP	ARG2	ASL	ASS1	AUH	BCAT2	BCKDHA	BHMT	CAD
C	CAT	CBS	CDO1	CKB	CPS1	CTH	CYP11B1	DAO	DBT	DDC	DLD	DNMT1
D	EHHADH	ENOPH1	GAMT	GATM	GCDH	GFPT1	GLS	GLUD1	GOT2	HAAO	HMGCL	HMGCS1
E	IDO1	INMT	IVD	KMO	KYNU	LAP3	LARS	LDHA	MAOB	MAT1A	MCCC2	MPST
F	MTAP	MTR	NAGS	NIT2	NOS2	OAT	ODC1	OGDHL	OTC	OXCT2	P4HA1	PDHB
G	PPAT	PRODH	PRODH2	PYCR1	PYCR3	SAT1	SDS	SRM	TAT	TDO2	TPH2	WARS
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	UPFH1124431	ENST00000515480.5	AADAT	ENSG00000109576	aminoadipate aminotransferase Source HGNC Symbol Acc HGNC 17929
A02	UPFH0470317	ENST00000392492.7	AANAT	ENSG00000129673	aralkylamine N-acetyltransferase Source HGNC Symbol Acc HGNC 19
A03	UPFH0274761	ENST00000360937.8	AOC1	ENSG00000002726	amine oxidase, copper containing 1 Source HGNC Symbol Acc HGNC 80
A04	UPFH0171314	ENST00000525808.5	ACADM	ENSG00000117054	acyl-CoA dehydrogenase medium chain Source HGNC Symbol Acc HGNC 89
A05	UPFH0012637	ENST00000531853.5	ACAT1	ENSG00000075239	acetyl-CoA acetyltransferase 1 Source HGNC Symbol Acc HGNC 93
A06	UPFH0256725	ENST00000485893.5	ACMSD	ENSG00000153086	aminocarboxymuconate semialdehyde decarboxylase Source HGNC Symbol Acc HGNC 19288
A07	UPFH0351683	ENST00000637199.1	ACY1	ENSG00000243989	aminoacylase 1 Source HGNC Symbol Acc HGNC 177
A08	UPFH0306941	ENST00000327435.11	ADI1	ENSG00000182551	acireductone dioxygenase 1 Source HGNC Symbol Acc HGNC 30576
A09	UPFH0390330	ENST00000375826.4	AGMAT	ENSG00000116771	agmatinase Source HGNC Symbol Acc HGNC 18407
A10	UPFH0396476	ENST00000538132.1	AHCY	ENSG00000101444	adenosylhomocysteinase Source HGNC Symbol Acc HGNC 343
A11	UPFH0016226	ENST00000371221.3	ALDH18A1	ENSG00000059573	aldehyde dehydrogenase 18 family member A1 Source HGNC Symbol Acc HGNC 9722
A12	UPFH0278359	ENST00000375341.8	ALDH4A1	ENSG00000159423	aldehyde dehydrogenase 4 family member A1 Source HGNC Symbol Acc HGNC 406
B01	UPFH0269239	ENST00000471457.1	ALDH9A1	ENSG00000143149	aldehyde dehydrogenase 9 family member A1 Source HGNC Symbol Acc HGNC 412
B02	UPFH0344747	ENST00000368885.8	AMD1	ENSG00000123505	adenosylmethionine decarboxylase 1 Source HGNC Symbol Acc HGNC 457
B03	UPFH1132776	ENST00000374700.7	AOX1	ENSG00000138356	aldehyde oxidase 1 Source HGNC Symbol Acc HGNC 553
B04	UPFH0515112	ENST00000395787.4	APIP	ENSG00000149089	APAF1 interacting protein Source HGNC Symbol Acc HGNC 17581
B05	UPFH0049034	ENST00000557120.5	ARG2	ENSG00000081181	arginase 2 Source HGNC Symbol Acc HGNC 664
B06	UPFH0465015	ENST00000362000.9	ASL	ENSG00000126522	argininosuccinate lyase Source HGNC Symbol Acc HGNC 746
B07	UPFH0212665	ENST00000443588.1	ASS1	ENSG00000130707	argininosuccinate synthase 1 Source HGNC Symbol Acc HGNC 758
B08	UPFH0606198	ENST00000303617.5	AUH	ENSG00000148090	AU RNA binding methylglutaconyl-CoA hydratase Source HGNC Symbol Acc HGNC 890
B09	UPFH0132491	ENST00000599246.5	BCAT2	ENSG00000105552	branched chain amino acid transaminase 2 Source HGNC Symbol Acc HGNC 977
B10	UPFH0395667	ENST00000457836.6	BCKDHA	ENSG00000248098	branched chain keto acid dehydrogenase E1, alpha polypeptide Source HGNC Symbol Acc HGNC 986
B11	UPFH0228197	ENST00000520703.1	BHMT	ENSG00000145692	betaine--homocysteine S-methyltransferase Source HGNC Symbol Acc HGNC 1047
B12	UPFH0323565	ENST00000403525.5	CAD	ENSG00000084774	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase Source HGNC Symbol Acc HGNC 1424
C01	UPFH1132782	ENST00000648322.1	CAT	ENSG00000121691	catalase Source HGNC Symbol Acc HGNC 1516
C02	UPFH0004459	ENST00000451248.5	CBS	ENSG00000160200	cystathionine-beta-synthase Source HGNC Symbol Acc HGNC 1550
C03	UPFH0088291	ENST00000250535.5	CDO1	ENSG00000129596	cysteine dioxygenase type 1 Source HGNC Symbol Acc HGNC 1795
C04	UPFH0014186	ENST00000553610.5	CKB	ENSG00000166165	creatine kinase B Source HGNC Symbol Acc HGNC 1991
C05	UPFH1123912	ENST00000430249.6	CPS1	ENSG00000021826	carbamoyl-phosphate synthase 1 Source HGNC Symbol Acc HGNC 2323
C06	UPFH0378146	ENST00000346806.2	CTH	ENSG00000116761	cystathionine gamma-lyase Source HGNC Symbol Acc HGNC 2501
C07	UPFH0402095	ENST00000491456.1	CYP1B1	ENSG00000138061	cytochrome P450 family 1 subfamily B member 1 Source HGNC Symbol Acc HGNC 2597
C08	UPFH0591358	ENST00000551281.5	DAO	ENSG00000110887	D-amino acid oxidase Source HGNC Symbol Acc HGNC 2671
C09	UPFH0378453	ENST00000370131.3	DBT	ENSG00000137992	dihydroipoamide branched chain transacylase E2 Source HGNC Symbol Acc HGNC 2698
C10	UPFH0335012	ENST00000380984.4	DDC	ENSG00000132437	dopa decarboxylase Source HGNC Symbol Acc HGNC 2719
		ENST00000205		ENSG000000	

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	UPFH1132362	402.10	DLD	091140	dihydropyrimidinase Source HGNC Symbol Acc HGNC 2898
C12	UPFH1132365	ENST00000359526.9	DNMT1	ENSG00000130816	DNA methyltransferase 1 Source HGNC Symbol Acc HGNC 2976
D01	UPFH0433081	ENST00000231887.8	EHHADH	ENSG00000113790	enoyl-CoA hydratase and 3-hydroxyacyl CoA dehydrogenase Source HGNC Symbol Acc HGNC 3247
D02	UPFH0565920	ENST00000505846.5	ENOPH1	ENSG00000145293	enolase-phosphatase 1 Source HGNC Symbol Acc HGNC 24599
D03	UPFH0563962	ENST00000591788.3	GAMT	ENSG00000130005	guanidinoacetate N-methyltransferase Source HGNC Symbol Acc HGNC 4136
D04	UPFH0303450	ENST00000558163.1	GATM	ENSG00000171766	glycine amidinotransferase Source HGNC Symbol Acc HGNC 4175
D05	UPFH0309992	ENST00000588905.5	GCDH	ENSG00000105607	glutaryl-CoA dehydrogenase Source HGNC Symbol Acc HGNC 4189
D06	UPFH0610173	ENST00000357308.8	GFPT1	ENSG00000198380	glutamine--fructose-6-phosphate transaminase 1 Source HGNC Symbol Acc HGNC 4241
D07	UPFH0368467	ENST00000338435.8	GLS	ENSG00000115419	glutaminase Source HGNC Symbol Acc HGNC 4331
D08	UPFH0112821	ENST00000474574.1	GLUD1	ENSG00000148672	glutamate dehydrogenase 1 Source HGNC Symbol Acc HGNC 4335
D09	UPFH0246660	ENST00000434819.2	GOT2	ENSG00000125166	glutamic-oxaloacetic transaminase 2 Source HGNC Symbol Acc HGNC 4433
D10	UPFH0090921	ENST00000404451.7	HAO	ENSG00000162882	3-hydroxyanthranilate 3,4-dioxygenase Source HGNC Symbol Acc HGNC 4796
D11	UPFH0158241	ENST00000513148.1	HMGCL	ENSG00000117305	3-hydroxy-3-methylglutaryl-CoA lyase Source HGNC Symbol Acc HGNC 5005
D12	UPFH0184133	ENST00000325110.11	HMGCS1	ENSG00000112972	3-hydroxy-3-methylglutaryl-CoA synthase 1 Source HGNC Symbol Acc HGNC 5007
E01	UPFH0069840	ENST00000518804.5	IDO1	ENSG00000131203	indoleamine 2,3-dioxygenase 1 Source HGNC Symbol Acc HGNC 6059
E02	UPFH0085873	ENST00000013222.5	INMT	ENSG00000241644	indolethylamine N-methyltransferase Source HGNC Symbol Acc HGNC 6069
E03	UPFH0545486	ENST00000491554.6	IVD	ENSG00000128928	isovaleryl-CoA dehydrogenase Source HGNC Symbol Acc HGNC 6186
E04	UPFH0012007	ENST00000366559.9	KMO	ENSG00000117009	kynurenine 3-monooxygenase Source HGNC Symbol Acc HGNC 6381
E05	UPFH0565848	ENST00000612147.4	KYNU	ENSG00000115919	kynureninase Source HGNC Symbol Acc HGNC 6469
E06	UPFH0142257	ENST00000513105.1	LAP3	ENSG00000202549	leucine aminopeptidase 3 Source HGNC Symbol Acc HGNC 18449
E07	UPFH0169216	ENST00000508709.1	LARS	ENSG00000133706	leucyl-tRNA synthetase Source HGNC Symbol Acc HGNC 6512
E08	UPFH1132517	ENST00000422447.8	LDHA	ENSG00000134333	lactate dehydrogenase A Source HGNC Symbol Acc HGNC 6535
E09	UPFH0020129	ENST00000378069.5	MAOB	ENSG00000206953	monoamine oxidase B Source HGNC Symbol Acc HGNC 6834
E10	UPFH0457557	ENST00000455001.1	MAT1A	ENSG00000151224	methionine adenosyltransferase 1A Source HGNC Symbol Acc HGNC 6903
E11	UPFH0166841	ENST00000507169.5	MCCC2	ENSG00000131844	methylcrotonoyl-CoA carboxylase 2 Source HGNC Symbol Acc HGNC 6937
E12	UPFH0522391	ENST00000397225.2	MPST	ENSG00000128309	mercaptopyruvate sulfurtransferase Source HGNC Symbol Acc HGNC 7223
F01	UPFH0124950	ENST00000644715.2	MTAP	ENSG00000209981	methylthioadenosine phosphorylase Source HGNC Symbol Acc HGNC 7413
F02	UPFH0462987	ENST00000650888.1	MTR	ENSG00000116984	5-methyltetrahydrofolate-homocysteine methyltransferase Source HGNC Symbol Acc HGNC 7468
F03	UPFH0505762	ENST00000293404.7	NAGS	ENSG00000161653	N-acetylglutamate synthase Source HGNC Symbol Acc HGNC 17996
F04	UPFH0335451	ENST00000472392.1	NIT2	ENSG00000114021	nitrilase family member 2 Source HGNC Symbol Acc HGNC 29878
F05	UPFH0572128	ENST00000313735.10	NOS2	ENSG00000200717	nitric oxide synthase 2 Source HGNC Symbol Acc HGNC 7873
F06	UPFH0157084	ENST00000368845.5	OAT	ENSG00000206515	ornithine aminotransferase Source HGNC Symbol Acc HGNC 8091
F07	UPFH0581844	ENST00000405333.5	ODC1	ENSG00000115758	ornithine decarboxylase 1 Source HGNC Symbol Acc HGNC 8109
F08	UPFH0184366	ENST00000374103.9	OGDHL	ENSG00000197444	oxoglutarate dehydrogenase like Source HGNC Symbol Acc HGNC 25590
F09	UPFH0349977	ENST00000488812.1	OTC	ENSG00000203647	ornithine carbamoyltransferase Source HGNC Symbol Acc HGNC 8512
F10	UPFH1125991	ENST00000327582.5	OXCT2	ENSG00000198754	3-oxoacid CoA-transferase 2 Source HGNC Symbol Acc HGNC 18606

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	UPFH0006326	ENST00000263556.3	P4HA1	ENSG00000122884	prolyl 4-hydroxylase subunit alpha 1 Source HGNC Symbol Acc HGNC 8546
F12	UPFH1132882	ENST00000383714.8	PDHB	ENSG00000168291	pyruvate dehydrogenase E1 beta subunit Source HGNC Symbol Acc HGNC 8808
G01	UPFH0418342	ENST00000510643.5	PPAT	ENSG00000128059	phosphoribosyl pyrophosphate amidotransferase Source HGNC Symbol Acc HGNC 9238
G02	UPFH0294293	ENST00000491604.5	PRODH	ENSG00000100033	proline dehydrogenase 1 Source HGNC Symbol Acc HGNC 9453
G03	UPFH0122989	ENST00000587808.1	PRODH2	ENSG00000250799	proline dehydrogenase 2 Source HGNC Symbol Acc HGNC 17325
G04	UPFH0558014	ENST00000584848.5	PYCR1	ENSG00000183010	pyrroline-5-carboxylate reductase 1 Source HGNC Symbol Acc HGNC 9721
G05	UPFH0326466	ENST00000377579.7	PYCR3	ENSG00000104524	pyrroline-5-carboxylate reductase 3 Source HGNC Symbol Acc HGNC 25846
G06	UPFH0275147	ENST00000489394.5	SAT1	ENSG00000130066	spermidine/spermine N1-acetyltransferase 1 Source HGNC Symbol Acc HGNC 10540
G07	UPFH0485304	ENST00000546785.1	SDS	ENSG00000135094	serine dehydratase Source HGNC Symbol Acc HGNC 10691
G08	UPFH0224725	ENST00000459997.1	SRM	ENSG00000116649	spermidine synthase Source HGNC Symbol Acc HGNC 11296
G09	UPFH0600142	ENST00000355962.5	TAT	ENSG00000198650	tyrosine aminotransferase Source HGNC Symbol Acc HGNC 11573
G10	UPFH0241455	ENST00000536354.3	TDO2	ENSG00000151790	tryptophan 2,3-dioxygenase Source HGNC Symbol Acc HGNC 11708
G11	UPFH0202012	ENST00000550403.5	TPH2	ENSG00000139287	tryptophan hydroxylase 2 Source HGNC Symbol Acc HGNC 20692
G12	UPFH0404550	ENST00000557135.5	WARS	ENSG00000140105	tryptophanyl-tRNA synthetase Source HGNC Symbol Acc HGNC 12729
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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