

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

## Human Drug Metabolism: Phase I Enzymes

Cat. no. 249950 SBHS-068ZR

For study focus gene expression analysis

### Shipping and storage

QuantiNova LNA PCR Focus Panels are shipped at ambient temperature. Immediately upon receipt, they should be stored 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 PCR Focus Panels should be used together with the QuantiNova Reverse Transcription Kit for cDNA synthesis and the QuantiNova SYBR® Green PCR Kit (Mastermix) for PCR.

### Panel layout (Rotor-Gene): QuantiNova LNA 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 PCR System 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	AADAC	ADH1A	ADH1B	ADH1C	ADH4	ADH5	ADH6	ADH7	ALDH1A1	ALDH1A2	ALDH1A3	ALDH1B1
B	ALDH2	ALDH3A1	ALDH3A2	ALDH3B1	ALDH3B2	ALDH4A1	ALDH5A1	ALDH6A1	ALDH7A1	ALDH8A1	ALDH9A1	CEL
C	CYP11A1	CYP11B1	CYP11B2	CYP17A1	CYP19A1	CYP1A1	CYP1A2	CYP1B1	CYP21A2	CYP24A1	CYP26A1	CYP26B1
D	CYP26C1	CYP27A1	CYP27B1	CYP2A13	CYP2B6	CYP2C18	CYP2C19	CYP2C8	CYP2C9	CYP2D6	CYP2E1	CYP2F1
E	CYP2R1	CYP2S1	CYP2W1	CYP3A4	CYP3A43	CYP3A5	CYP3A7	CYP4A11	CYP4A22	CYP4B1	CYP4F11	CYP4F12
F	CYP4F2	CYP4F3	CYP4F8	CYP7A1	CYP7B1	CYP8B1	DHRS2	DPYD	ESD	FMO1	FMO2	FMO3
G	FMO4	FMO5	GZMA	GZMB	HSD17B10	MAOA	MAOB	PTGS1	PTGS2	UCHL1	UCHL3	XDH
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	QIC	QIC	QIC	PPC	PPC	PPC

## Gene table: QuantiNova LNA PCR Focus Panel

Position	Assay	Name	Symbol	Ensembl ID	Description
A01	SBH0357042	ENST00000232892.12	AADAC	ENSG00000114771	arylacetamide deacetylase Source HGNC Symbol Acc HGNC 17
A02	SBH0631361	ENST00000511656.1	ADH1A	ENSG00000187758	alcohol dehydrogenase 1A (class I), alpha polypeptide Source HGNC Symbol Acc HGNC 249
A03	SBH0298817	ENST00000305046.13	ADH1B	ENSG00000196616	alcohol dehydrogenase 1B (class I), beta polypeptide Source HGNC Symbol Acc HGNC 250
A04	SBH0545206	ENST00000511397.3	ADH1C	ENSG00000248144	alcohol dehydrogenase 1C (class I), gamma polypeptide Source HGNC Symbol Acc HGNC 251
A05	SBH0118220	ENST00000629236.2	ADH4	ENSG00000198099	alcohol dehydrogenase 4 (class II), pi polypeptide Source HGNC Symbol Acc HGNC 252
A06	SBH1219726	ENST00000626055.2	ADH5	ENSG00000197894	alcohol dehydrogenase 5 (class III), chi polypeptide Source HGNC Symbol Acc HGNC 253
A07	SBH0483069	ENST00000394899.6	ADH6	ENSG00000172955	alcohol dehydrogenase 6 (class V) Source HGNC Symbol Acc HGNC 255
A08	SBH0267562	ENST00000437033.6	ADH7	ENSG00000196344	alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide Source HGNC Symbol Acc HGNC 256
A09	SBH0340208	ENST00000482210.5	ALDH1A1	ENSG00000165092	aldehyde dehydrogenase 1 family member A1 Source HGNC Symbol Acc HGNC 402
A10	SBH0245370	ENST00000347587.7	ALDH1A2	ENSG00000128918	aldehyde dehydrogenase 1 family member A2 Source HGNC Symbol Acc HGNC 15472
A11	SBH0001085	ENST00000558869.1	ALDH1A3	ENSG00000184254	aldehyde dehydrogenase 1 family member A3 Source HGNC Symbol Acc HGNC 409
A12	SBH0437739	ENST00000377698.4	ALDH1B1	ENSG00000137124	aldehyde dehydrogenase 1 family member B1 Source HGNC Symbol Acc HGNC 407
B01	SBH0048037	ENST00000549106.1	ALDH2	ENSG00000111275	aldehyde dehydrogenase 2 family member Source HGNC Symbol Acc HGNC 404
B02	SBH0652990	ENST00000439102.6	ALDH3A1	ENSG00000108602	aldehyde dehydrogenase 3 family member A1 Source HGNC Symbol Acc HGNC 405
B03	SBH0367037	ENST00000631291.2	ALDH3A2	ENSG00000072210	aldehyde dehydrogenase 3 family member A2 Source HGNC Symbol Acc HGNC 403
B04	SBH0458574	ENST00000619675.4	ALDH3B1	ENSG00000006534	aldehyde dehydrogenase 3 family member B1 Source HGNC Symbol Acc HGNC 410
B05	SBH0483866	ENST00000531881.5	ALDH3B2	ENSG00000132746	aldehyde dehydrogenase 3 family member B2 Source HGNC Symbol Acc HGNC 411
B06	SBH0447629	ENST00000290597.9	ALDH4A1	ENSG00000159423	aldehyde dehydrogenase 4 family member A1 Source HGNC Symbol Acc HGNC 406
B07	SBH0217462	ENST00000479394.1	ALDH5A1	ENSG00000112294	aldehyde dehydrogenase 5 family member A1 Source HGNC Symbol Acc HGNC 408
B08	SBH0385728	ENST00000554501.5	ALDH6A1	ENSG00000119711	aldehyde dehydrogenase 6 family member A1 Source HGNC Symbol Acc HGNC 7179
B09	SBH0014124	ENST00000636886.1	ALDH7A1	ENSG00000164904	aldehyde dehydrogenase 7 family member A1 Source HGNC Symbol Acc HGNC 877
B10	SBH0002309	ENST00000534012.1	ALDH8A1	ENSG00000118514	aldehyde dehydrogenase 8 family member A1 Source HGNC Symbol Acc HGNC 15471
B11	SBH0362637	ENST00000354775.4	ALDH9A1	ENSG00000143149	aldehyde dehydrogenase 9 family member A1 Source HGNC Symbol Acc HGNC 412
B12	SBH0083490	ENST00000372080.6	CEL	ENSG00000170835	carboxyl ester lipase Source HGNC Symbol Acc HGNC 1848
C01	SBH0521137	ENST00000450547.1	CYP11A1	ENSG00000140459	cytochrome P450 family 11 subfamily A member 1 Source HGNC Symbol Acc HGNC 2590
C02	SBH0310390	ENST00000519285.5	CYP11B1	ENSG00000160882	cytochrome P450 family 11 subfamily B member 1 Source HGNC Symbol Acc HGNC 2591
C03	SBH0529415	ENST00000323110.2	CYP11B2	ENSG00000179142	cytochrome P450 family 11 subfamily B member 2 Source HGNC Symbol Acc HGNC 2592
C04	SBH0449399	ENST00000369887.4	CYP17A1	ENSG00000148795	cytochrome P450 family 17 subfamily A member 1 Source HGNC Symbol Acc HGNC 2593
C05	SBH0032966	ENST00000405913.7	CYP19A1	ENSG00000137869	cytochrome P450 family 19 subfamily A member 1 Source HGNC Symbol Acc HGNC 2594
C06	SBH0255774	ENST00000566503.1	CYP1A1	ENSG00000140465	cytochrome P450 family 1 subfamily A member 1 Source HGNC Symbol Acc HGNC 2595
C07	SBH0642290	ENST00000343932.5	CYP1A2	ENSG00000140505	cytochrome P450 family 1 subfamily A member 2 Source HGNC Symbol Acc HGNC 2596
C08	SBH0230648	ENST00000494864.1	CYP1B1	ENSG00000138061	cytochrome P450 family 1 subfamily B member 1 Source HGNC Symbol Acc HGNC 2597
C09	SBH0337883	ENST00000435122.3	CYP21A2	ENSG00000231852	cytochrome P450 family 21 subfamily A member 2 Source HGNC Symbol Acc HGNC 2600
C10	SBH0652780	ENST00000395954.3	CYP24A1	ENSG00000019186	cytochrome P450 family 24 subfamily A member 1 Source HGNC Symbol Acc HGNC 2602
		ENST00000224		ENSG000000	cytochrome P450 family 26 subfamily A member 1 Source HGNC Symbol Acc

Position	Assay	Name	Symbol	Ensembl ID	Description
C11	SBH0001730	356.5	CYP26A1	095596	HGNC 2603
C12	SBH0016249	ENST00000001146.6	CYP26B1	ENSG00000003137	cytochrome P450 family 26 subfamily B member 1 Source HGNC Symbol Acc HGNC 20581
D01	SBH0246287	ENST000000285949.5	CYP26C1	ENSG000000187553	cytochrome P450 family 26 subfamily C member 1 Source HGNC Symbol Acc HGNC 20577
D02	SBH0498697	ENST00000411688.1	CYP27A1	ENSG000000135929	cytochrome P450 family 27 subfamily A member 1 Source HGNC Symbol Acc HGNC 2605
D03	SBH0520918	ENST00000228606.9	CYP27B1	ENSG000000111012	cytochrome P450 family 27 subfamily B member 1 Source HGNC Symbol Acc HGNC 2606
D04	SBH0564790	ENST00000330436.3	CYP2A13	ENSG000000197838	cytochrome P450 family 2 subfamily A member 13 Source HGNC Symbol Acc HGNC 2608
D05	SBH0306809	ENST00000593831.1	CYP2B6	ENSG000000197408	cytochrome P450 family 2 subfamily B member 6 Source HGNC Symbol Acc HGNC 2615
D06	SBH0413190	ENST00000339022.6	CYP2C18	ENSG000000108242	cytochrome P450 family 2 subfamily C member 18 Source HGNC Symbol Acc HGNC 2620
D07	SBH0134172	ENST00000480405.2	CYP2C19	ENSG000000165841	cytochrome P450 family 2 subfamily C member 19 Source HGNC Symbol Acc HGNC 2621
D08	SBH0193551	ENST00000533320.5	CYP2C8	ENSG000000138115	cytochrome P450 family 2 subfamily C member 8 Source HGNC Symbol Acc HGNC 2622
D09	SBH0147429	ENST00000643112.1	CYP2C9	ENSG000000138109	cytochrome P450 family 2 subfamily C member 9 Source HGNC Symbol Acc HGNC 2623
D10	SBH0262798	ENST00000359033.4	CYP2D6	ENSG000000100197	cytochrome P450 family 2 subfamily D member 6 Source HGNC Symbol Acc HGNC 2625
D11	SBH0164427	ENST00000418356.1	CYP2E1	ENSG000000130649	cytochrome P450 family 2 subfamily E member 1 Source HGNC Symbol Acc HGNC 2631
D12	SBH0046077	ENST00000532164.2	CYP2F1	ENSG000000197446	cytochrome P450 family 2 subfamily F member 1 Source HGNC Symbol Acc HGNC 2632
E01	SBH0203717	ENST00000526489.5	CYP2R1	ENSG000000186104	cytochrome P450 family 2 subfamily R member 1 Source HGNC Symbol Acc HGNC 20580
E02	SBH0392972	ENST00000595590.1	CYP2S1	ENSG000000167600	cytochrome P450 family 2 subfamily S member 1 Source HGNC Symbol Acc HGNC 15654
E03	SBH0433379	ENST00000340150.10	CYP2W1	ENSG000000073067	cytochrome P450 family 2 subfamily W member 1 Source HGNC Symbol Acc HGNC 20243
E04	SBH0592580	ENST00000652018.1	CYP3A4	ENSG000000160868	cytochrome P450 family 3 subfamily A member 4 Source HGNC Symbol Acc HGNC 2637
E05	SBH0035913	ENST00000354829.6	CYP3A43	ENSG000000021461	cytochrome P450 family 3 subfamily A member 43 Source HGNC Symbol Acc HGNC 17450
E06	SBH0140291	ENST00000480723.5	CYP3A5	ENSG000000106258	cytochrome P450 family 3 subfamily A member 5 Source HGNC Symbol Acc HGNC 2638
E07	SBH0021086	ENST00000498080.1	CYP3A7	ENSG000000160870	cytochrome P450 family 3 subfamily A member 7 Source HGNC Symbol Acc HGNC 2640
E08	SBH0004621	ENST00000462347.5	CYP4A11	ENSG000000187048	cytochrome P450 family 4 subfamily A member 11 Source HGNC Symbol Acc HGNC 2642
E09	SBH0316195	ENST00000490948.5	CYP4A22	ENSG000000162365	cytochrome P450 family 4 subfamily A member 22 Source HGNC Symbol Acc HGNC 20575
E10	SBH0121262	ENST00000640628.1	CYP4B1	ENSG000000142973	cytochrome P450 family 4 subfamily B member 1 Source HGNC Symbol Acc HGNC 2644
E11	SBH0572953	ENST00000620614.4	CYP4F11	ENSG000000171903	cytochrome P450 family 4 subfamily F member 11 Source HGNC Symbol Acc HGNC 13265
E12	SBH0345835	ENST00000548237.5	CYP4F12	ENSG000000186204	cytochrome P450 family 4 subfamily F member 12 Source HGNC Symbol Acc HGNC 18857
F01	SBH0018310	ENST00000587671.2	CYP4F2	ENSG000000186115	cytochrome P450 family 4 subfamily F member 2 Source HGNC Symbol Acc HGNC 2645
F02	SBH0010120	ENST00000587360.1	CYP4F3	ENSG000000186529	cytochrome P450 family 4 subfamily F member 3 Source HGNC Symbol Acc HGNC 2646
F03	SBH0405477	ENST00000587680.2	CYP4F8	ENSG000000186526	cytochrome P450 family 4 subfamily F member 8 Source HGNC Symbol Acc HGNC 2648
F04	SBH0038066	ENST00000301645.4	CYP7A1	ENSG000000167910	cytochrome P450 family 7 subfamily A member 1 Source HGNC Symbol Acc HGNC 2651
F05	SBH0455426	ENST00000523954.1	CYP7B1	ENSG000000172817	cytochrome P450 family 7 subfamily B member 1 Source HGNC Symbol Acc HGNC 2652
F06	SBH0177525	ENST00000437102.1	CYP8B1	ENSG000000180432	cytochrome P450 family 8 subfamily B member 1 Source HGNC Symbol Acc HGNC 2653
F07	SBH0573243	ENST00000250383.10	DHRS2	ENSG000000100867	dehydrogenase/reductase 2 Source HGNC Symbol Acc HGNC 18349
F08	SBH0218621	ENST00000370192.7	DPYD	ENSG000000188641	dihydropyrimidine dehydrogenase Source HGNC Symbol Acc HGNC 3012
F09	SBH0492987	ENST00000495654.1	ESD	ENSG000000139684	esterase D Source HGNC Symbol Acc HGNC 3465
F10	SBH0628645	ENST00000354841.4	FMO1	ENSG000000010932	flavin containing monooxygenase 1 Source HGNC Symbol Acc HGNC 3769

Position	Assay	Name	Symbol	Ensembl ID	Description
F11	SBH0229281	ENST00000209929.10	FMO2	ENSG00000094963	flavin containing monoxygenase 2 Source HGNC Symbol Acc HGNC 3770
F12	SBH0583531	ENST00000367755.9	FMO3	ENSG00000007933	flavin containing monoxygenase 3 Source HGNC Symbol Acc HGNC 3771
G01	SBH0261769	ENST00000497228.5	FMO4	ENSG00000076258	flavin containing monoxygenase 4 Source HGNC Symbol Acc HGNC 3772
G02	SBH0434366	ENST00000619062.1	FMO5	ENSG000000131781	flavin containing monoxygenase 5 Source HGNC Symbol Acc HGNC 3773
G03	SBH0311276	ENST00000274306.7	GZMA	ENSG000000145649	granzyme A Source HGNC Symbol Acc HGNC 4708
G04	SBH0351472	ENST00000382540.5	GZMB	ENSG000000100453	granzyme B Source HGNC Symbol Acc HGNC 4709
G05	SBH0249036	ENST00000375304.9	HSD17B10	ENSG000000072506	hydroxysteroid 17-beta dehydrogenase 10 Source HGNC Symbol Acc HGNC 4800
G06	SBH0491214	ENST00000542639.5	MAOA	ENSG000000189221	monoamine oxidase A Source HGNC Symbol Acc HGNC 6833
G07	SBH0081757	ENST00000487544.1	MAOB	ENSG000000069535	monoamine oxidase B Source HGNC Symbol Acc HGNC 6834
G08	SBH1220343	ENST00000540753.6	PTGS1	ENSG000000095303	prostaglandin-endoperoxide synthase 1 Source HGNC Symbol Acc HGNC 9604
G09	SBH1220344	ENST00000367468.10	PTGS2	ENSG000000073756	prostaglandin-endoperoxide synthase 2 Source HGNC Symbol Acc HGNC 9605
G10	SBH0084476	ENST00000284440.8	UCHL1	ENSG000000154277	ubiquitin C-terminal hydrolase L1 Source HGNC Symbol Acc HGNC 12513
G11	SBH0240619	ENST00000618773.4	UCHL3	ENSG000000118939	ubiquitin C-terminal hydrolase L3 Source HGNC Symbol Acc HGNC 12515
G12	SBH0661683	ENST00000379416.4	XDH	ENSG000000158125	xanthine dehydrogenase Source HGNC Symbol Acc HGNC 12805
H01	SBH1220543	ENST00000646664.1	ACTB	ENSG000000075624	actin beta Source HGNC Symbol Acc HGNC 132
H02	SBH1220550	ENST00000558401.6	B2M	ENSG000000166710	beta-2-microglobulin Source HGNC Symbol Acc HGNC 914
H03	SBH1220545	ENST00000396861.5	GAPDH	ENSG000000111640	glyceraldehyde-3-phosphate dehydrogenase Source HGNC Symbol Acc HGNC 4141
H04	SBH1220546	ENST00000298556.8	HPRT1	ENSG000000165704	hypoxanthine phosphoribosyltransferase 1 Source HGNC Symbol Acc HGNC 5157
H05	SBH1220553	ENST00000546989.5	RPLP0	ENSG000000089157	ribosomal protein lateral stalk subunit P0 Source HGNC Symbol Acc HGNC 10371
H06	SBH1218553	Sybr_HGDC	HGDC	Sybr_HGDC	Human Genomic DNA Contamination
H07	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H08	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H09	SBH1218551	Sybr_QIC	QIC	Sybr_QIC	QuantiNova Internal Control
H10	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control
H11	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control
H12	SBH1218550	Sybr_PPC	PPC	Sybr_PPC	Positive PCR Control



## Related products

Product	Contents	Cat. no.
QuantiNova LNA PCR QC Panel	These panels are designed to assess the quality of RNA samples before characterization using QuantiNova LNA PCR Focus Panels; available in 96-well, 384-well, and Rotor-Disc 100 formats	249940
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 SYBR Green RT-PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml QuantiNova SYBR Green RT-PCR Master Mix, 20 $\mu$ l QuantiNova SYBR Green 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	208152
QuantiNova SYBR Green PCR Kit (100)*	For 100 x 20 $\mu$ l reactions: 1 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 $\mu$ l QuantiNova Yellow Template Dilution Buffer, 250 $\mu$ l QN ROX Reference Dye, 1.9 ml Water	208052

\*Larger kit sizes available.

The QuantiNova LNA 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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