

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

## Human Fatty Acid Metabolism

Cat. no. 249950 SBHS-007ZR

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 | ACAA1  | ACAA2  | ACAD10 | ACAD11 | ACAD9  | ACADL  | ACADM   | ACADS   | ACADSB  | ACADVL  | ACAT1   | ACAT2   |
| B | ACOT1  | ACOT12 | ACOT6  | ACOT7  | ACOT8  | ACOT9  | ACOX1   | ACOX2   | ACOX3   | ACSBG1  | ACSBG2  | ACSL1   |
| C | ACSL3  | ACSL4  | ACSL5  | ACSL6  | ACSM3  | ACSM4  | ACSM5   | ALDH2   | BDH1    | BDH2    | CPT1A   | CPT1B   |
| D | CPT1C  | CPT2   | CRAT   | CROT   | DECR1  | DECR2  | ECHS1   | ECI2    | EHHADH  | FABP1   | FABP2   | FABP3   |
| E | FABP4  | FABP5  | FABP6  | FABP7  | FASN   | GCDH   | GK      | GK2     | GPD1    | GPD2    | HADHA   | HMGCL   |
| F | HMGCS1 | HMGCS2 | LIPE   | LPL    | MCEE   | MMUT   | OXCT2   | PECR    | PPA1    | PRKAA1  | PRKAA2  | PRKAB1  |
| G | PRKAB2 | PRKACA | PRKACB | PRKAG1 | PRKAG2 | PRKAG3 | SLC27A1 | SLC27A2 | SLC27A3 | SLC27A4 | SLC27A5 | SLC27A6 |
| 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      | SBH0669228 | ENST00000450296.5  | ACAA1  | ENSG00000060971 | acetyl-CoA acyltransferase 1 Source HGNC Symbol Acc HGNC 82                        |
| A02      | SBH0372581 | ENST00000285093.15 | ACAA2  | ENSG00000167315 | acetyl-CoA acyltransferase 2 Source HGNC Symbol Acc HGNC 83                        |
| A03      | SBH0135030 | ENST00000413681.7  | ACAD10 | ENSG00000111271 | acyl-CoA dehydrogenase family member 10 Source HGNC Symbol Acc HGNC 21597          |
| A04      | SBH0214978 | ENST00000485198.5  | ACAD11 | ENSG00000240303 | acyl-CoA dehydrogenase family member 11 Source HGNC Symbol Acc HGNC 30211          |
| A05      | SBH0301802 | ENST00000514336.1  | ACAD9  | ENSG00000177646 | acyl-CoA dehydrogenase family member 9 Source HGNC Symbol Acc HGNC 21497           |
| A06      | SBH0609590 | ENST00000482502.1  | ACADL  | ENSG00000115361 | acyl-CoA dehydrogenase long chain Source HGNC Symbol Acc HGNC 88                   |
| A07      | SBH0112462 | ENST00000370841.8  | ACADM  | ENSG00000117054 | acyl-CoA dehydrogenase medium chain Source HGNC Symbol Acc HGNC 89                 |
| A08      | SBH0481999 | ENST00000242592.9  | ACADS  | ENSG00000122971 | acyl-CoA dehydrogenase short chain Source HGNC Symbol Acc HGNC 90                  |
| A09      | SBH0233602 | ENST00000358776.6  | ACADSB | ENSG00000196177 | acyl-CoA dehydrogenase short/branched chain Source HGNC Symbol Acc HGNC 91         |
| A10      | SBH0640641 | ENST00000579425.5  | ACADVL | ENSG00000072778 | acyl-CoA dehydrogenase very long chain Source HGNC Symbol Acc HGNC 92              |
| A11      | SBH0589422 | ENST00000527942.5  | ACAT1  | ENSG00000075239 | acetyl-CoA acetyltransferase 1 Source HGNC Symbol Acc HGNC 93                      |
| A12      | SBH0122152 | ENST00000467951.1  | ACAT2  | ENSG00000120437 | acetyl-CoA acetyltransferase 2 Source HGNC Symbol Acc HGNC 94                      |
| B01      | SBH0469099 | ENST00000557556.1  | ACOT1  | ENSG00000184227 | acyl-CoA thioesterase 1 Source HGNC Symbol Acc HGNC 33128                          |
| B02      | SBH0493957 | ENST00000307624.8  | ACOT12 | ENSG00000172497 | acyl-CoA thioesterase 12 Source HGNC Symbol Acc HGNC 24436                         |
| B03      | SBH0096678 | ENST00000554229.1  | ACOT6  | ENSG00000205669 | acyl-CoA thioesterase 6 Source HGNC Symbol Acc HGNC 33159                          |
| B04      | SBH0241114 | ENST00000377855.6  | ACOT7  | ENSG00000097021 | acyl-CoA thioesterase 7 Source HGNC Symbol Acc HGNC 24157                          |
| B05      | SBH0167358 | ENST00000652771.1  | ACOT8  | ENSG00000101473 | acyl-CoA thioesterase 8 Source HGNC Symbol Acc HGNC 15919                          |
| B06      | SBH0572828 | ENST00000379303.10 | ACOT9  | ENSG00000123130 | acyl-CoA thioesterase 9 Source HGNC Symbol Acc HGNC 17152                          |
| B07      | SBH0169326 | ENST00000293217.10 | ACOX1  | ENSG00000161533 | acyl-CoA oxidase 1 Source HGNC Symbol Acc HGNC 119                                 |
| B08      | SBH0405699 | ENST00000459701.6  | ACOX2  | ENSG00000168306 | acyl-CoA oxidase 2 Source HGNC Symbol Acc HGNC 120                                 |
| B09      | SBH0102149 | ENST00000356406.10 | ACOX3  | ENSG00000087008 | acyl-CoA oxidase 3, pristanoyl Source HGNC Symbol Acc HGNC 121                     |
| B10      | SBH0099966 | ENST00000559707.5  | ACSBG1 | ENSG00000103740 | acyl-CoA synthetase bubblegum family member 1 Source HGNC Symbol Acc HGNC 29567    |
| B11      | SBH0544145 | ENST00000588304.5  | ACSBG2 | ENSG00000130377 | acyl-CoA synthetase bubblegum family member 2 Source HGNC Symbol Acc HGNC 24174    |
| B12      | SBH0588811 | ENST00000505492.1  | ACSL1  | ENSG00000151726 | acyl-CoA synthetase long chain family member 1 Source HGNC Symbol Acc HGNC 3569    |
| C01      | SBH1219721 | ENST00000413316.1  | ACSL3  | ENSG00000123983 | acyl-CoA synthetase long chain family member 3 Source HGNC Symbol Acc HGNC 3570    |
| C02      | SBH0030689 | ENST00000348502.10 | ACSL4  | ENSG00000068366 | acyl-CoA synthetase long chain family member 4 Source HGNC Symbol Acc HGNC 3571    |
| C03      | SBH0217698 | ENST00000356116.5  | ACSL5  | ENSG00000197142 | acyl-CoA synthetase long chain family member 5 Source HGNC Symbol Acc HGNC 16526   |
| C04      | SBH0311062 | ENST00000651127.1  | ACSL6  | ENSG00000164398 | acyl-CoA synthetase long chain family member 6 Source HGNC Symbol Acc HGNC 16496   |
| C05      | SBH0585903 | ENST00000567387.5  | ACSM3  | ENSG00000005187 | acyl-CoA synthetase medium chain family member 3 Source HGNC Symbol Acc HGNC 10522 |
| C06      | SBH0337968 | ENST00000399422.4  | ACSM4  | ENSG00000215009 | acyl-CoA synthetase medium chain family member 4 Source HGNC Symbol Acc HGNC 32016 |
| C07      | SBH0187716 | ENST00000331849.8  | ACSM5  | ENSG00000183549 | acyl-CoA synthetase medium chain family member 5 Source HGNC Symbol Acc HGNC 26060 |
| C08      | SBH0048037 | ENST00000549106.1  | ALDH2  | ENSG00000111275 | aldehyde dehydrogenase 2 family member Source HGNC Symbol Acc HGNC 404             |
| C09      | SBH0064118 | ENST00000392379.6  | BDH1   | ENSG00000161267 | 3-hydroxybutyrate dehydrogenase 1 Source HGNC Symbol Acc HGNC 1027                 |
| C10      | SBH0280596 | ENST00000506521.5  | BDH2   | ENSG00000164039 | 3-hydroxybutyrate dehydrogenase 2 Source HGNC Symbol Acc HGNC 32389                |
|          |            | ENST00000539       |        | ENSG000000      |                                                                                    |

| Position | Assay      | Name               | Symbol | Ensembl ID      | Description                                                                                                    |
|----------|------------|--------------------|--------|-----------------|----------------------------------------------------------------------------------------------------------------|
| C11      | SBH0531896 | 743.5              | CPT1A  | 110090          | carnitine palmitoyltransferase 1A Source HGNC Symbol Acc HGNC 2328                                             |
| C12      | SBH0574504 | ENST00000312108.11 | CPT1B  | ENSG00000205560 | carnitine palmitoyltransferase 1B Source HGNC Symbol Acc HGNC 2329                                             |
| D01      | SBH0670923 | ENST00000598396.5  | CPT1C  | ENSG00000169169 | carnitine palmitoyltransferase 1C Source HGNC Symbol Acc HGNC 18540                                            |
| D02      | SBH1219910 | ENST00000636891.1  | CPT2   | ENSG00000157184 | carnitine palmitoyltransferase 2 Source HGNC Symbol Acc HGNC 2330                                              |
| D03      | SBH0083140 | ENST00000318080.7  | CRAT   | ENSG00000095321 | carnitine O-acetyltransferase Source HGNC Symbol Acc HGNC 2342                                                 |
| D04      | SBH0208275 | ENST00000419147.6  | CROT   | ENSG00000005469 | carnitine O-octanoyltransferase Source HGNC Symbol Acc HGNC 2366                                               |
| D05      | SBH0042189 | ENST00000519328.5  | DECR1  | ENSG00000104325 | 2,4-dienoyl-CoA reductase 1 Source HGNC Symbol Acc HGNC 2753                                                   |
| D06      | SBH0200871 | ENST00000437024.5  | DECR2  | ENSG00000242612 | 2,4-dienoyl-CoA reductase 2 Source HGNC Symbol Acc HGNC 2754                                                   |
| D07      | SBH0093368 | ENST00000368547.4  | ECHS1  | ENSG00000127884 | enoyl-CoA hydratase, short chain 1 Source HGNC Symbol Acc HGNC 3151                                            |
| D08      | SBH0282967 | ENST00000496241.6  | ECI2   | ENSG00000198721 | enoyl-CoA delta isomerase 2 Source HGNC Symbol Acc HGNC 14601                                                  |
| D09      | SBH0116631 | ENST00000456310.5  | EHHADH | ENSG00000113790 | enoyl-CoA hydratase and 3-hydroxyacyl CoA dehydrogenase Source HGNC Symbol Acc HGNC 3247                       |
| D10      | SBH1219991 | ENST00000393750.3  | FABP1  | ENSG00000163586 | fatty acid binding protein 1 Source HGNC Symbol Acc HGNC 3555                                                  |
| D11      | SBH0295583 | ENST00000274024.3  | FABP2  | ENSG00000145384 | fatty acid binding protein 2 Source HGNC Symbol Acc HGNC 3556                                                  |
| D12      | SBH0060313 | ENST00000373713.6  | FABP3  | ENSG00000121769 | fatty acid binding protein 3 Source HGNC Symbol Acc HGNC 3557                                                  |
| E01      | SBH0327090 | ENST00000521734.1  | FABP4  | ENSG00000170323 | fatty acid binding protein 4 Source HGNC Symbol Acc HGNC 3559                                                  |
| E02      | SBH0233621 | ENST00000396359.1  | FABP5  | ENSG00000164687 | fatty acid binding protein 5 Source HGNC Symbol Acc HGNC 3560                                                  |
| E03      | SBH0386907 | ENST00000393980.8  | FABP6  | ENSG00000170231 | fatty acid binding protein 6 Source HGNC Symbol Acc HGNC 3561                                                  |
| E04      | SBH0346793 | ENST00000368444.8  | FABP7  | ENSG00000164434 | fatty acid binding protein 7 Source HGNC Symbol Acc HGNC 3562                                                  |
| E05      | SBH0282662 | ENST00000635197.1  | FASN   | ENSG00000169710 | fatty acid synthase Source HGNC Symbol Acc HGNC 3594                                                           |
| E06      | SBH0139602 | ENST00000222214.10 | GCDH   | ENSG00000105607 | glutaryl-CoA dehydrogenase Source HGNC Symbol Acc HGNC 4189                                                    |
| E07      | SBH0594548 | ENST00000378946.7  | GK     | ENSG00000198814 | glycerol kinase Source HGNC Symbol Acc HGNC 4289                                                               |
| E08      | SBH0394695 | ENST00000358842.4  | GK2    | ENSG00000196475 | glycerol kinase 2 Source HGNC Symbol Acc HGNC 4291                                                             |
| E09      | SBH0000085 | ENST00000548152.1  | GPD1   | ENSG00000167588 | glycerol-3-phosphate dehydrogenase 1 Source HGNC Symbol Acc HGNC 4455                                          |
| E10      | SBH1220030 | ENST00000409674.5  | GPD2   | ENSG00000115159 | glycerol-3-phosphate dehydrogenase 2 Source HGNC Symbol Acc HGNC 4456                                          |
| E11      | SBH0246718 | ENST00000644428.1  | HADHA  | ENSG00000084754 | hydroxyacyl-CoA dehydrogenase trifunctional multienzyme complex subunit alpha Source HGNC Symbol Acc HGNC 4801 |
| E12      | SBH0475182 | ENST00000235958.4  | HMGCL  | ENSG00000117305 | 3-hydroxy-3-methylglutaryl-CoA lyase Source HGNC Symbol Acc HGNC 5005                                          |
| F01      | SBH0203453 | ENST00000514610.1  | HMGCS1 | ENSG00000112972 | 3-hydroxy-3-methylglutaryl-CoA synthase 1 Source HGNC Symbol Acc HGNC 5007                                     |
| F02      | SBH0048516 | ENST00000544913.2  | HMGCS2 | ENSG00000134240 | 3-hydroxy-3-methylglutaryl-CoA synthase 2 Source HGNC Symbol Acc HGNC 5008                                     |
| F03      | SBH0638061 | ENST00000601189.1  | LIPE   | ENSG00000079435 | lipase E, hormone sensitive type Source HGNC Symbol Acc HGNC 6621                                              |
| F04      | SBH1220175 | ENST00000311322.10 | LPL    | ENSG00000175445 | lipoprotein lipase Source HGNC Symbol Acc HGNC 6677                                                            |
| F05      | SBH0147354 | ENST00000244217.6  | MCEE   | ENSG00000124370 | methylmalonyl-CoA epimerase Source HGNC Symbol Acc HGNC 16732                                                  |
| F06      | SBH0404755 | ENST00000274813.4  | MMUT   | ENSG00000146085 | methylmalonyl-CoA mutase Source HGNC Symbol Acc HGNC 7526                                                      |
| F07      | SBH0305524 | ENST00000327582.5  | OXCT2  | ENSG00000198754 | 3-oxoacid CoA-transferase 2 Source HGNC Symbol Acc HGNC 18606                                                  |
| F08      | SBH0134997 | ENST00000497889.5  | PECR   | ENSG00000115425 | peroxisomal trans-2-enoyl-CoA reductase Source HGNC Symbol Acc HGNC 18281                                      |
| F09      | SBH1220320 | ENST00000373232.8  | PPA1   | ENSG00000180817 | pyrophosphatase (inorganic) 1 Source HGNC Symbol Acc HGNC 9226                                                 |
| F10      | SBH1220332 | ENST00000397128.6  | PRKAA1 | ENSG00000132356 | protein kinase AMP-activated catalytic subunit alpha 1 Source HGNC Symbol Acc HGNC 9376                        |

| Position | Assay      | Name               | Symbol  | Ensembl ID      | Description                                                                                 |
|----------|------------|--------------------|---------|-----------------|---------------------------------------------------------------------------------------------|
| F11      | SBH0060864 | ENST00000371244.9  | PRKAA2  | ENSG00000162409 | protein kinase AMP-activated catalytic subunit alpha 2 Source HGNC Symbol Acc HGNC 9377     |
| F12      | SBH0514318 | ENST00000545223.1  | PRKAB1  | ENSG00000111725 | protein kinase AMP-activated non-catalytic subunit beta 1 Source HGNC Symbol Acc HGNC 9378  |
| G01      | SBH0146629 | ENST00000254101.4  | PRKAB2  | ENSG00000131791 | protein kinase AMP-activated non-catalytic subunit beta 2 Source HGNC Symbol Acc HGNC 9379  |
| G02      | SBH0440536 | ENST00000308677.8  | PRKACA  | ENSG00000072062 | protein kinase cAMP-activated catalytic subunit alpha Source HGNC Symbol Acc HGNC 9380      |
| G03      | SBH0491110 | ENST00000432111.5  | PRKACB  | ENSG00000142875 | protein kinase cAMP-activated catalytic subunit beta Source HGNC Symbol Acc HGNC 9381       |
| G04      | SBH0638541 | ENST00000550125.5  | PRKAG1  | ENSG00000181929 | protein kinase AMP-activated non-catalytic subunit gamma 1 Source HGNC Symbol Acc HGNC 9385 |
| G05      | SBH0170149 | ENST00000652136.1  | PRKAG2  | ENSG00000106617 | protein kinase AMP-activated non-catalytic subunit gamma 2 Source HGNC Symbol Acc HGNC 9386 |
| G06      | SBH0373404 | ENST00000430489.1  | PRKAG3  | ENSG00000115592 | protein kinase AMP-activated non-catalytic subunit gamma 3 Source HGNC Symbol Acc HGNC 9387 |
| G07      | SBH0159749 | ENST00000593701.5  | SLC27A1 | ENSG00000130304 | solute carrier family 27 member 1 Source HGNC Symbol Acc HGNC 10995                         |
| G08      | SBH0259960 | ENST00000267842.10 | SLC27A2 | ENSG00000140284 | solute carrier family 27 member 2 Source HGNC Symbol Acc HGNC 10996                         |
| G09      | SBH0481249 | ENST00000484014.5  | SLC27A3 | ENSG00000143554 | solute carrier family 27 member 3 Source HGNC Symbol Acc HGNC 10997                         |
| G10      | SBH1220402 | ENST00000300456.5  | SLC27A4 | ENSG00000167114 | solute carrier family 27 member 4 Source HGNC Symbol Acc HGNC 10998                         |
| G11      | SBH0355039 | ENST00000263093.7  | SLC27A5 | ENSG00000083807 | solute carrier family 27 member 5 Source HGNC Symbol Acc HGNC 10999                         |
| G12      | SBH0235601 | ENST00000395266.5  | SLC27A6 | ENSG00000113396 | solute carrier family 27 member 6 Source HGNC Symbol Acc HGNC 11000                         |
| H01      | SBH1220543 | ENST00000646664.1  | ACTB    | ENSG00000075624 | actin beta Source HGNC Symbol Acc HGNC 132                                                  |
| H02      | SBH1220550 | ENST00000558401.6  | B2M     | ENSG00000166710 | beta-2-microglobulin Source HGNC Symbol Acc HGNC 914                                        |
| H03      | SBH1220545 | ENST00000396861.5  | GAPDH   | ENSG00000111640 | glyceraldehyde-3-phosphate dehydrogenase Source HGNC Symbol Acc HGNC 4141                   |
| H04      | SBH1220546 | ENST00000298556.8  | HPRT1   | ENSG00000165704 | hypoxanthine phosphoribosyltransferase 1 Source HGNC Symbol Acc HGNC 5157                   |
| H05      | SBH1220553 | ENST00000546989.5  | RPLP0   | ENSG00000089157 | 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 µl reactions: 20 µl 8x gDNA Removal Mix, 10 µl Reverse Transcription Enzyme, 40 µl Reverse Transcription Mix (containing RT primers), 20 µl Internal Control RNA, 1.9 ml RNase-Free Water                              | 205410   |
| QuantiNova SYBR Green RT-PCR Kit (100)*    | For 100 x 20 µl reactions: 1 ml QuantiNova SYBR Green RT-PCR Master Mix, 20 µl QuantiNova SYBR Green RT Mix, 20 µl Internal Control RNA, 500 µl Yellow Template Dilution Buffer, 250 µl ROX Reference Dye, 1.9 µl RNase-Free Water | 208152   |
| QuantiNova SYBR Green PCR Kit (100)*       | For 100 x 20 µl reactions: 1 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 µl QuantiNova Yellow Template Dilution Buffer, 250 µl 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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