

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

## Human Drug Transporters

Cat. no. 249950 SBHS-070ZA

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 (96-well): QuantiNova LNA PCR Focus Panel

For the 384-well (4 × 96) PCR panels, genes are present in a staggered format. 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 | ABCA1   | ABCA12  | ABCA13  | ABCA2    | ABCA3   | ABCA4   | ABCA5   | ABCA9   | ABCB1   | ABCB11  | ABCB4   | ABCB5   |
| B | ABCB6   | ABCC1   | ABCC10  | ABCC11   | ABCC12  | ABCC2   | ABCC3   | ABCC4   | ABCC5   | ABCD1   | ABCD3   | ABCD4   |
| C | ABCF1   | ABCG2   | ABCG8   | AQP1     | AQP7    | AQP9    | ATP6V0C | ATP7A   | ATP7B   | MVP     | SLC10A1 | SLC10A2 |
| D | SLC15A1 | SLC15A2 | SLC16A1 | SLC16A2  | SLC16A3 | SLC19A1 | SLC19A2 | SLC19A3 | SLC22A1 | SLC22A2 | SLC22A3 | SLC22A6 |
| E | SLC22A7 | SLC22A8 | SLC22A9 | SLC25A13 | SLC28A1 | SLC28A2 | SLC28A3 | SLC29A1 | SLC29A2 | SLC2A1  | SLC2A2  | SLC2A3  |
| F | SLC31A1 | SLC38A2 | SLC38A5 | SLC3A1   | SLC3A2  | SLC5A1  | SLC5A4  | SLC7A11 | SLC7A5  | SLC7A6  | SLC7A7  | SLC7A8  |
| G | SLC7A9  | SLCO1A2 | SLCO1B1 | SLCO1B3  | SLCO2A1 | SLCO2B1 | SLCO3A1 | SLCO4A1 | TAP1    | TAP2    | VDAC1   | VDAC2   |
| 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      | SBH0311739 | ENST00000423487.6  | ABCA1   | ENSG00000165029  | ATP binding cassette subfamily A member 1 Source HGNC Symbol Acc HGNC 29                         |
| A02      | SBH0495469 | ENST00000272895.12 | ABCA12  | ENSG00000144452  | ATP binding cassette subfamily A member 12 Source HGNC Symbol Acc HGNC 14637                     |
| A03      | SBH0480906 | ENST00000611776.4  | ABCA13  | ENSG00000179869  | ATP binding cassette subfamily A member 13 Source HGNC Symbol Acc HGNC 14638                     |
| A04      | SBH0398917 | ENST00000470535.2  | ABCA2   | ENSG00000107331  | ATP binding cassette subfamily A member 2 Source HGNC Symbol Acc HGNC 32                         |
| A05      | SBH0351432 | ENST00000567910.1  | ABCA3   | ENSG00000167972  | ATP binding cassette subfamily A member 3 Source HGNC Symbol Acc HGNC 33                         |
| A06      | SBH0599941 | ENST00000470771.1  | ABCA4   | ENSG00000198691  | ATP binding cassette subfamily A member 4 Source HGNC Symbol Acc HGNC 34                         |
| A07      | SBH0331081 | ENST00000593253.5  | ABCA5   | ENSG00000154265  | ATP binding cassette subfamily A member 5 Source HGNC Symbol Acc HGNC 35                         |
| A08      | SBH0550961 | ENST00000495634.5  | ABCA9   | ENSG00000154258  | ATP binding cassette subfamily A member 9 Source HGNC Symbol Acc HGNC 39                         |
| A09      | SBH0346091 | ENST00000622132.4  | ABCB1   | ENSG00000085563  | ATP binding cassette subfamily B member 1 Source HGNC Symbol Acc HGNC 40                         |
| A10      | SBH0651110 | ENST00000650372.1  | ABCB11  | ENSG00000073734  | ATP binding cassette subfamily B member 11 Source HGNC Symbol Acc HGNC 42                        |
| A11      | SBH0585650 | ENST00000469770.1  | ABCB4   | ENSG00000005471  | ATP binding cassette subfamily B member 4 Source HGNC Symbol Acc HGNC 45                         |
| A12      | SBH0347703 | ENST00000477094.5  | ABCB5   | ENSG00000004846  | ATP binding cassette subfamily B member 5 Source HGNC Symbol Acc HGNC 46                         |
| B01      | SBH0300509 | ENST00000492543.1  | ABCB6   | ENSG000000115657 | ATP binding cassette subfamily B member 6 (Langereis blood group) Source HGNC Symbol Acc HGNC 47 |
| B02      | SBH0544598 | ENST00000575422.5  | ABCC1   | ENSG000000103222 | ATP binding cassette subfamily C member 1 Source HGNC Symbol Acc HGNC 51                         |
| B03      | SBH0172409 | ENST00000469856.1  | ABCC10  | ENSG000000124574 | ATP binding cassette subfamily C member 10 Source HGNC Symbol Acc HGNC 52                        |
| B04      | SBH0413392 | ENST00000394748.5  | ABCC11  | ENSG000000121270 | ATP binding cassette subfamily C member 11 Source HGNC Symbol Acc HGNC 14639                     |
| B05      | SBH0464214 | ENST00000534418.5  | ABCC12  | ENSG000000140798 | ATP binding cassette subfamily C member 12 Source HGNC Symbol Acc HGNC 14640                     |
| B06      | SBH0620483 | ENST00000649932.1  | ABCC2   | ENSG000000023839 | ATP binding cassette subfamily C member 2 Source HGNC Symbol Acc HGNC 53                         |
| B07      | SBH0597013 | ENST00000503337.1  | ABCC3   | ENSG000000108846 | ATP binding cassette subfamily C member 3 Source HGNC Symbol Acc HGNC 54                         |
| B08      | SBH0603818 | ENST00000376887.9  | ABCC4   | ENSG000000125257 | ATP binding cassette subfamily C member 4 Source HGNC Symbol Acc HGNC 55                         |
| B09      | SBH0509688 | ENST00000427120.6  | ABCC5   | ENSG000000114770 | ATP binding cassette subfamily C member 5 Source HGNC Symbol Acc HGNC 56                         |
| B10      | SBH0399420 | ENST00000370129.4  | ABCD1   | ENSG000000101986 | ATP binding cassette subfamily D member 1 Source HGNC Symbol Acc HGNC 61                         |
| B11      | SBH0421705 | ENST00000315713.5  | ABCD3   | ENSG000000117528 | ATP binding cassette subfamily D member 3 Source HGNC Symbol Acc HGNC 67                         |
| B12      | SBH0276783 | ENST00000469672.5  | ABCD4   | ENSG000000119688 | ATP binding cassette subfamily D member 4 Source HGNC Symbol Acc HGNC 68                         |
| C01      | SBH0663692 | ENST00000441867.5  | ABCF1   | ENSG000000204574 | ATP binding cassette subfamily F member 1 Source HGNC Symbol Acc HGNC 70                         |
| C02      | SBH0422197 | ENST00000503830.2  | ABCG2   | ENSG000000118777 | ATP binding cassette subfamily G member 2 (Junior blood group) Source HGNC Symbol Acc HGNC 74    |
| C03      | SBH0574766 | ENST00000644611.1  | ABCG8   | ENSG000000143921 | ATP binding cassette subfamily G member 8 Source HGNC Symbol Acc HGNC 13887                      |
| C04      | SBH0349409 | ENST00000482461.1  | AQP1    | ENSG000000240583 | aquaporin 1 (Colton blood group) Source HGNC Symbol Acc HGNC 633                                 |
| C05      | SBH0254306 | ENST00000439678.5  | AQP7    | ENSG000000165269 | aquaporin 7 Source HGNC Symbol Acc HGNC 640                                                      |
| C06      | SBH0124167 | ENST00000558772.5  | AQP9    | ENSG000000103569 | aquaporin 9 Source HGNC Symbol Acc HGNC 643                                                      |
| C07      | SBH0543128 | ENST00000565223.1  | ATP6VOC | ENSG000000185883 | ATPase H+ transporting V0 subunit c Source HGNC Symbol Acc HGNC 855                              |
| C08      | SBH0171031 | ENST00000343533.9  | ATP7A   | ENSG000000165240 | ATPase copper transporting alpha Source HGNC Symbol Acc HGNC 869                                 |
| C09      | SBH0357801 | ENST00000448424.6  | ATP7B   | ENSG000000123191 | ATPase copper transporting beta Source HGNC Symbol Acc HGNC 870                                  |
| C10      | SBH0507275 | ENST00000562463.5  | MVP     | ENSG000000013364 | major vault protein Source HGNC Symbol Acc HGNC 7531                                             |
|          |            | ENST000000216      |         | ENSG000000       |                                                                                                  |

| Position | Assay      | Name               | Symbol   | Ensembl ID      | Description                                                                                 |
|----------|------------|--------------------|----------|-----------------|---------------------------------------------------------------------------------------------|
| C11      | SBH0201781 | 540.5              | SLC10A1  | 100652          | solute carrier family 10 member 1 Source HGNC Symbol Acc HGNC 10905                         |
| C12      | SBH0318136 | ENST00000245312.4  | SLC10A2  | ENSG00000125255 | solute carrier family 10 member 2 Source HGNC Symbol Acc HGNC 10906                         |
| D01      | SBH0042031 | ENST00000376503.10 | SLC15A1  | ENSG00000088386 | solute carrier family 15 member 1 Source HGNC Symbol Acc HGNC 10920                         |
| D02      | SBH0650018 | ENST00000295605.6  | SLC15A2  | ENSG00000163406 | solute carrier family 15 member 2 Source HGNC Symbol Acc HGNC 10921                         |
| D03      | SBH0572295 | ENST00000538576.5  | SLC16A1  | ENSG00000155380 | solute carrier family 16 member 1 Source HGNC Symbol Acc HGNC 10922                         |
| D04      | SBH0648973 | ENST00000590447.1  | SLC16A2  | ENSG00000147100 | solute carrier family 16 member 2 Source HGNC Symbol Acc HGNC 10923                         |
| D05      | SBH0175803 | ENST00000578684.5  | SLC16A3  | ENSG00000141526 | solute carrier family 16 member 3 Source HGNC Symbol Acc HGNC 10924                         |
| D06      | SBH0090749 | ENST00000650808.1  | SLC19A1  | ENSG00000173638 | solute carrier family 19 member 1 Source HGNC Symbol Acc HGNC 10937                         |
| D07      | SBH0497909 | ENST00000646527.1  | SLC19A2  | ENSG00000117479 | solute carrier family 19 member 2 Source HGNC Symbol Acc HGNC 10938                         |
| D08      | SBH0360687 | ENST00000419059.1  | SLC19A3  | ENSG00000135917 | solute carrier family 19 member 3 Source HGNC Symbol Acc HGNC 16266                         |
| D09      | SBH0297400 | ENST00000460902.2  | SLC22A1  | ENSG00000175003 | solute carrier family 22 member 1 Source HGNC Symbol Acc HGNC 10963                         |
| D10      | SBH0238583 | ENST00000491092.1  | SLC22A2  | ENSG00000112499 | solute carrier family 22 member 2 Source HGNC Symbol Acc HGNC 10966                         |
| D11      | SBH0308103 | ENST00000275300.3  | SLC22A3  | ENSG00000146477 | solute carrier family 22 member 3 Source HGNC Symbol Acc HGNC 10967                         |
| D12      | SBH0654288 | ENST00000377871.7  | SLC22A6  | ENSG00000197901 | solute carrier family 22 member 6 Source HGNC Symbol Acc HGNC 10970                         |
| E01      | SBH0356988 | ENST00000372589.7  | SLC22A7  | ENSG00000137204 | solute carrier family 22 member 7 Source HGNC Symbol Acc HGNC 10971                         |
| E02      | SBH0507034 | ENST00000542904.1  | SLC22A8  | ENSG00000149452 | solute carrier family 22 member 8 Source HGNC Symbol Acc HGNC 10972                         |
| E03      | SBH0640402 | ENST00000279178.3  | SLC22A9  | ENSG00000149742 | solute carrier family 22 member 9 Source HGNC Symbol Acc HGNC 16261                         |
| E04      | SBH0151182 | ENST00000416240.6  | SLC25A13 | ENSG00000004864 | solute carrier family 25 member 13 Source HGNC Symbol Acc HGNC 10983                        |
| E05      | SBH0239581 | ENST00000286749.3  | SLC28A1  | ENSG00000156222 | solute carrier family 28 member 1 Source HGNC Symbol Acc HGNC 11001                         |
| E06      | SBH0233207 | ENST00000560767.1  | SLC28A2  | ENSG00000137860 | solute carrier family 28 member 2 Source HGNC Symbol Acc HGNC 11002                         |
| E07      | SBH0037156 | ENST00000495823.1  | SLC28A3  | ENSG00000197506 | solute carrier family 28 member 3 Source HGNC Symbol Acc HGNC 16484                         |
| E08      | SBH0497761 | ENST00000643152.1  | SLC29A1  | ENSG00000112759 | solute carrier family 29 member 1 (Augustine blood group) Source HGNC Symbol Acc HGNC 11003 |
| E09      | SBH0647755 | ENST00000546034.1  | SLC29A2  | ENSG00000174669 | solute carrier family 29 member 2 Source HGNC Symbol Acc HGNC 11004                         |
| E10      | SBH0102394 | ENST00000426263.8  | SLC2A1   | ENSG00000117394 | solute carrier family 2 member 1 Source HGNC Symbol Acc HGNC 11005                          |
| E11      | SBH0303859 | ENST00000471379.1  | SLC2A2   | ENSG00000163581 | solute carrier family 2 member 2 Source HGNC Symbol Acc HGNC 11006                          |
| E12      | SBH0631058 | ENST00000476634.1  | SLC2A3   | ENSG00000059804 | solute carrier family 2 member 3 Source HGNC Symbol Acc HGNC 11007                          |
| F01      | SBH0061332 | ENST00000374212.5  | SLC31A1  | ENSG00000136868 | solute carrier family 31 member 1 Source HGNC Symbol Acc HGNC 11016                         |
| F02      | SBH0387577 | ENST00000256689.10 | SLC38A2  | ENSG00000134294 | solute carrier family 38 member 2 Source HGNC Symbol Acc HGNC 13448                         |
| F03      | SBH0249054 | ENST00000619100.4  | SLC38A5  | ENSG00000017483 | solute carrier family 38 member 5 Source HGNC Symbol Acc HGNC 18070                         |
| F04      | SBH0374041 | ENST00000409387.5  | SLC3A1   | ENSG00000138079 | solute carrier family 3 member 1 Source HGNC Symbol Acc HGNC 11025                          |
| F05      | SBH0457225 | ENST00000537508.5  | SLC3A2   | ENSG00000168003 | solute carrier family 3 member 2 Source HGNC Symbol Acc HGNC 11026                          |
| F06      | SBH0517326 | ENST00000266088.8  | SLC5A1   | ENSG00000100170 | solute carrier family 5 member 1 Source HGNC Symbol Acc HGNC 11036                          |
| F07      | SBH0408015 | ENST00000266086.5  | SLC5A4   | ENSG00000100191 | solute carrier family 5 member 4 Source HGNC Symbol Acc HGNC 11039                          |
| F08      | SBH0313752 | ENST00000509248.1  | SLC7A11  | ENSG00000151012 | solute carrier family 7 member 11 Source HGNC Symbol Acc HGNC 11059                         |
| F09      | SBH0382215 | ENST00000563489.1  | SLC7A5   | ENSG00000103257 | solute carrier family 7 member 5 Source HGNC Symbol Acc HGNC 11063                          |
| F10      | SBH0354607 | ENST00000219343.11 | SLC7A6   | ENSG00000103064 | solute carrier family 7 member 6 Source HGNC Symbol Acc HGNC 11064                          |
|          |            |                    |          |                 |                                                                                             |

| Position | Assay      | Name              | Symbol  | Ensembl ID      | Description                                                                                  |
|----------|------------|-------------------|---------|-----------------|----------------------------------------------------------------------------------------------|
| F11      | SBH0585585 | ENST00000397532.7 | SLC7A7  | ENSG00000155465 | solute carrier family 7 member 7 Source HGNC Symbol Acc HGNC 11065                           |
| F12      | SBH0035006 | ENST00000397310.6 | SLC7A8  | ENSG00000092068 | solute carrier family 7 member 8 Source HGNC Symbol Acc HGNC 11066                           |
| G01      | SBH0025807 | ENST00000590341.5 | SLC7A9  | ENSG00000021488 | solute carrier family 7 member 9 Source HGNC Symbol Acc HGNC 11067                           |
| G02      | SBH0646520 | ENST00000453443.5 | SLCO1A2 | ENSG00000084453 | solute carrier organic anion transporter family member 1A2 Source HGNC Symbol Acc HGNC 10956 |
| G03      | SBH0032599 | ENST00000256958.2 | SLCO1B1 | ENSG00000134538 | solute carrier organic anion transporter family member 1B1 Source HGNC Symbol Acc HGNC 10959 |
| G04      | SBH0320011 | ENST00000261196.6 | SLCO1B3 | ENSG00000111700 | solute carrier organic anion transporter family member 1B3 Source HGNC Symbol Acc HGNC 10961 |
| G05      | SBH0589116 | ENST00000462770.5 | SLCO2A1 | ENSG00000174640 | solute carrier organic anion transporter family member 2A1 Source HGNC Symbol Acc HGNC 10955 |
| G06      | SBH0117254 | ENST00000454962.6 | SLCO2B1 | ENSG00000137491 | solute carrier organic anion transporter family member 2B1 Source HGNC Symbol Acc HGNC 10962 |
| G07      | SBH0151140 | ENST0000055549.5  | SLCO3A1 | ENSG00000176463 | solute carrier organic anion transporter family member 3A1 Source HGNC Symbol Acc HGNC 10952 |
| G08      | SBH0003702 | ENST00000217159.6 | SLCO4A1 | ENSG00000101187 | solute carrier organic anion transporter family member 4A1 Source HGNC Symbol Acc HGNC 10953 |
| G09      | SBH1220432 | ENST00000354258.4 | TAP1    | ENSG00000168394 | transporter 1, ATP binding cassette subfamily B member Source HGNC Symbol Acc HGNC 43        |
| G10      | SBH0627392 | ENST00000374899.8 | TAP2    | ENSG00000204267 | transporter 2, ATP binding cassette subfamily B member Source HGNC Symbol Acc HGNC 44        |
| G11      | SBH0183050 | ENST00000489906.5 | VDAC1   | ENSG00000213585 | voltage dependent anion channel 1 Source HGNC Symbol Acc HGNC 12669                          |
| G12      | SBH0442383 | ENST00000543351.5 | VDAC2   | ENSG00000165637 | voltage dependent anion channel 2 Source HGNC Symbol Acc HGNC 12672                          |
| 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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