

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

## Human Cardiovascular Disease

Cat. no. 249950 SBHS-174ZR

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 | ACE      | ACTC1   | ADRA1A  | ADRA1B | ADRA1D | ADRB1   | ADRB2 | ADRB3   | AEBP1   | AGTR1  | ANGA4  | AR     |
| B | ATP2A2   | ATPSF1A | C6      | CCL11  | CCL18  | CCL2    | CCND1 | CDKN1B  | COL11A1 | COL1A1 | COL3A1 | CREB5  |
| C | CREM     | CRYAB   | CRYM    | CCN2   | DCN    | DMD     | DUSP6 | ENAH    | EPOR    | F2R    | FN1    | FRZB   |
| D | GOS2     | GJA1    | HMGCL   | HMGCR  | HMGN2  | KLHL3   | MAOA  | MAPK1   | MAPK8   | MMP13  | MSI2   | MT1X   |
| E | MYH10    | MYH6    | NDUFB5  | NEBL   | NFIA   | NIKX2-5 | NPPA  | NPPB    | NPR1    | NPR2   | NPR3   | NR3C1  |
| F | NR3C2    | PDE3A   | PDE3B   | PDE5A  | PDE7A  | POSTN   | PTN   | RARRES1 | RASSF1  | REN    | RTN4   | S100A1 |
| G | SERPINA3 | SFRP4   | SLC12A1 | SNCA   | SPOCK1 | STAT1   | TCF4  | THBS2   | TNNI3   | TNNT2  | UBB    | ZYX    |
| 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      | SBH1219717 | ENST00000428043.5 | ACE     | ENSG00000159640 | angiotensin I converting enzyme Source HGNC Symbol Acc HGNC 2707                              |
| A02      | SBH0548789 | ENST00000647798.1 | ACTC1   | ENSG00000159251 | actin, alpha, cardiac muscle 1 Source HGNC Symbol Acc HGNC 143                                |
| A03      | SBH0604482 | ENST00000380573.3 | ADRA1A  | ENSG00000120907 | adrenoceptor alpha 1A Source HGNC Symbol Acc HGNC 277                                         |
| A04      | SBH0418597 | ENST00000306675.5 | ADRA1B  | ENSG00000170214 | adrenoceptor alpha 1B Source HGNC Symbol Acc HGNC 278                                         |
| A05      | SBH0314853 | ENST00000379453.5 | ADRA1D  | ENSG00000171873 | adrenoceptor alpha 1D Source HGNC Symbol Acc HGNC 280                                         |
| A06      | SBH0305943 | ENST00000369295.3 | ADRB1   | ENSG00000043591 | adrenoceptor beta 1 Source HGNC Symbol Acc HGNC 285                                           |
| A07      | SBH0519738 | ENST00000305988.5 | ADRB2   | ENSG00000169252 | adrenoceptor beta 2 Source HGNC Symbol Acc HGNC 286                                           |
| A08      | SBH0064559 | ENST00000345060.5 | ADRB3   | ENSG00000188778 | adrenoceptor beta 3 Source HGNC Symbol Acc HGNC 288                                           |
| A09      | SBH0087280 | ENST00000450684.2 | AEBP1   | ENSG00000106624 | AE binding protein 1 Source HGNC Symbol Acc HGNC 303                                          |
| A10      | SBH0123687 | ENST00000418473.6 | AGTR1   | ENSG00000144891 | angiotensin II receptor type 1 Source HGNC Symbol Acc HGNC 336                                |
| A11      | SBH0169675 | ENST00000394295.6 | ANXA4   | ENSG00000196975 | annexin A4 Source HGNC Symbol Acc HGNC 542                                                    |
| A12      | SBH0056376 | ENST00000374690.8 | AR      | ENSG00000169083 | androgen receptor Source HGNC Symbol Acc HGNC 644                                             |
| B01      | SBH0372412 | ENST00000539276.7 | ATP2A2  | ENSG00000174437 | ATPase sarcoplasmic/endoplasmic reticulum Ca2+ transporting 2 Source HGNC Symbol Acc HGNC 812 |
| B02      | SBH1219765 | ENST00000590665.5 | ATP5F1A | ENSG00000152234 | ATP synthase F1 subunit alpha Source HGNC Symbol Acc HGNC 823                                 |
| B03      | SBH0634876 | ENST00000511470.1 | C6      | ENSG00000039537 | complement C6 Source HGNC Symbol Acc HGNC 1339                                                |
| B04      | SBH0204041 | ENST00000305869.3 | CCL11   | ENSG00000172156 | C-C motif chemokine ligand 11 Source HGNC Symbol Acc HGNC 10610                               |
| B05      | SBH0292440 | ENST00000616054.1 | CCL18   | ENSG00000275385 | C-C motif chemokine ligand 18 Source HGNC Symbol Acc HGNC 10616                               |
| B06      | SBH0228134 | ENST00000225831.4 | CCL2    | ENSG00000108691 | C-C motif chemokine ligand 2 Source HGNC Symbol Acc HGNC 10618                                |
| B07      | SBH0434090 | ENST00000227507.2 | CCND1   | ENSG00000110092 | cyclin D1 Source HGNC Symbol Acc HGNC 1582                                                    |
| B08      | SBH1219879 | ENST00000442489.1 | CDKN1B  | ENSG00000111276 | cyclin dependent kinase inhibitor 1B Source HGNC Symbol Acc HGNC 1785                         |
| B09      | SBH0251687 | ENST00000358392.6 | COL11A1 | ENSG00000060718 | collagen type XI alpha 1 chain Source HGNC Symbol Acc HGNC 2186                               |
| B10      | SBH0268763 | ENST00000225964.9 | COL1A1  | ENSG00000108821 | collagen type I alpha 1 chain Source HGNC Symbol Acc HGNC 2197                                |
| B11      | SBH0521348 | ENST00000304636.7 | COL3A1  | ENSG00000168542 | collagen type III alpha 1 chain Source HGNC Symbol Acc HGNC 2201                              |
| B12      | SBH0379152 | ENST00000461921.5 | CREB5   | ENSG00000146592 | cAMP responsive element binding protein 5 Source HGNC Symbol Acc HGNC 16844                   |
| C01      | SBH0192533 | ENST00000474362.5 | CREM    | ENSG00000095794 | cAMP responsive element modulator Source HGNC Symbol Acc HGNC 2352                            |
| C02      | SBH0502900 | ENST00000531198.5 | CRYAB   | ENSG00000109846 | crystallin alpha B Source HGNC Symbol Acc HGNC 2389                                           |
| C03      | SBH0409731 | ENST00000571666.1 | CRYM    | ENSG00000103316 | crystallin mu Source HGNC Symbol Acc HGNC 2418                                                |
| C04      | SBH1219917 | ENST00000367976.4 | CCN2    | ENSG00000118523 | cellular communication network factor 2 Source HGNC Symbol Acc HGNC 2500                      |
| C05      | SBH1219942 | ENST00000420120.6 | DCN     | ENSG00000011465 | decorin Source HGNC Symbol Acc HGNC 2705                                                      |
| C06      | SBH0339261 | ENST00000619831.4 | DMD     | ENSG00000198947 | dystrophin Source HGNC Symbol Acc HGNC 2928                                                   |
| C07      | SBH0100832 | ENST00000547140.1 | DUSP6   | ENSG00000139318 | dual specificity phosphatase 6 Source HGNC Symbol Acc HGNC 3072                               |
| C08      | SBH0493404 | ENST00000497899.6 | ENAH    | ENSG00000154380 | ENAH, actin regulator Source HGNC Symbol Acc HGNC 18271                                       |
| C09      | SBH0577732 | ENST00000592375.6 | EPOR    | ENSG00000187266 | erythropoietin receptor Source HGNC Symbol Acc HGNC 3416                                      |
| C10      | SBH1219989 | ENST00000319211.5 | F2R     | ENSG00000181104 | coagulation factor II thrombin receptor Source HGNC Symbol Acc HGNC 3537                      |
|          |            | ENST00000354      |         | ENSG000000      |                                                                                               |

| Position | Assay      | Name               | Symbol  | Ensembl ID      | Description                                                                       |
|----------|------------|--------------------|---------|-----------------|-----------------------------------------------------------------------------------|
| C11      | SBH1220003 | 785.9              | FN1     | 115414          | fibronectin 1 Source HGNC Symbol Acc HGNC 3778                                    |
| C12      | SBH1220009 | ENST00000295113.5  | FRZB    | ENSG00000162998 | frizzled related protein Source HGNC Symbol Acc HGNC 3959                         |
| D01      | SBH0609023 | ENST00000367029.5  | G0S2    | ENSG00000123689 | G0/G1 switch 2 Source HGNC Symbol Acc HGNC 30229                                  |
| D02      | SBH0022905 | ENST00000282561.4  | GJA1    | ENSG00000152661 | gap junction protein alpha 1 Source HGNC Symbol Acc HGNC 4274                     |
| D03      | SBH0475182 | ENST00000235958.4  | HMGCL   | ENSG00000117305 | 3-hydroxy-3-methylglutaryl-CoA lyase Source HGNC Symbol Acc HGNC 5005             |
| D04      | SBH0118882 | ENST00000511206.5  | HMGCR   | ENSG00000113161 | 3-hydroxy-3-methylglutaryl-CoA reductase Source HGNC Symbol Acc HGNC 5006         |
| D05      | SBH0187094 | ENST00000361427.6  | HMGN2   | ENSG00000198830 | high mobility group nucleosomal binding domain 2 Source HGNC Symbol Acc HGNC 4986 |
| D06      | SBH0153296 | ENST00000506873.5  | KLHL3   | ENSG00000146021 | kelch like family member 3 Source HGNC Symbol Acc HGNC 6354                       |
| D07      | SBH0491214 | ENST00000542639.5  | MAOA    | ENSG00000189221 | monoamine oxidase A Source HGNC Symbol Acc HGNC 6833                              |
| D08      | SBH1220192 | ENST00000544786.1  | MAPK1   | ENSG00000100030 | mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871               |
| D09      | SBH0294318 | ENST00000395611.7  | MAPK8   | ENSG00000107643 | mitogen-activated protein kinase 8 Source HGNC Symbol Acc HGNC 6881               |
| D10      | SBH1220218 | ENST00000615555.4  | MMP13   | ENSG00000137745 | matrix metalloproteinase 13 Source HGNC Symbol Acc HGNC 7159                      |
| D11      | SBH0096483 | ENST00000416426.6  | MSI2    | ENSG00000153944 | musashi RNA binding protein 2 Source HGNC Symbol Acc HGNC 18585                   |
| D12      | SBH0641990 | ENST00000394485.5  | MT1X    | ENSG00000187193 | metallothionein 1X Source HGNC Symbol Acc HGNC 7405                               |
| E01      | SBH0109230 | ENST00000465458.1  | MYH10   | ENSG00000133026 | myosin heavy chain 10 Source HGNC Symbol Acc HGNC 7568                            |
| E02      | SBH0399897 | ENST00000557461.2  | MYH6    | ENSG00000197616 | myosin heavy chain 6 Source HGNC Symbol Acc HGNC 7576                             |
| E03      | SBH1220250 | ENST00000611971.4  | NDUFB5  | ENSG00000136521 | NADH ubiquinone oxidoreductase subunit B5 Source HGNC Symbol Acc HGNC 7700        |
| E04      | SBH0547457 | ENST00000493005.5  | NEBL    | ENSG00000078114 | nebulette Source HGNC Symbol Acc HGNC 16932                                       |
| E05      | SBH0087853 | ENST00000485903.6  | NFIA    | ENSG00000162599 | nuclear factor I A Source HGNC Symbol Acc HGNC 7784                               |
| E06      | SBH0461083 | ENST00000521848.1  | NKX2-5  | ENSG00000183072 | NK2 homeobox 5 Source HGNC Symbol Acc HGNC 2488                                   |
| E07      | SBH0369836 | ENST00000610706.1  | NPPA    | ENSG00000175206 | natriuretic peptide A Source HGNC Symbol Acc HGNC 7939                            |
| E08      | SBH1220277 | ENST00000376468.4  | NPPB    | ENSG00000120937 | natriuretic peptide B Source HGNC Symbol Acc HGNC 7940                            |
| E09      | SBH1220278 | ENST00000368680.4  | NPR1    | ENSG00000169418 | natriuretic peptide receptor 1 Source HGNC Symbol Acc HGNC 7943                   |
| E10      | SBH0169931 | ENST00000464810.5  | NPR2    | ENSG00000159899 | natriuretic peptide receptor 2 Source HGNC Symbol Acc HGNC 7944                   |
| E11      | SBH0070120 | ENST00000265074.13 | NPR3    | ENSG00000113389 | natriuretic peptide receptor 3 Source HGNC Symbol Acc HGNC 7945                   |
| E12      | SBH1220280 | ENST00000652686.1  | NR3C1   | ENSG00000113580 | nuclear receptor subfamily 3 group C member 1 Source HGNC Symbol Acc HGNC 7978    |
| F01      | SBH0060773 | ENST00000344721.8  | NR3C2   | ENSG00000151623 | nuclear receptor subfamily 3 group C member 2 Source HGNC Symbol Acc HGNC 7979    |
| F02      | SBH0372566 | ENST00000359062.3  | PDE3A   | ENSG00000172572 | phosphodiesterase 3A Source HGNC Symbol Acc HGNC 8778                             |
| F03      | SBH0236379 | ENST00000455098.2  | PDE3B   | ENSG00000152270 | phosphodiesterase 3B Source HGNC Symbol Acc HGNC 8779                             |
| F04      | SBH0155927 | ENST00000354960.8  | PDE5A   | ENSG00000138735 | phosphodiesterase 5A Source HGNC Symbol Acc HGNC 8784                             |
| F05      | SBH0342011 | ENST00000396642.7  | PDE7A   | ENSG00000205268 | phosphodiesterase 7A Source HGNC Symbol Acc HGNC 8791                             |
| F06      | SBH0466638 | ENST00000379749.8  | POSTN   | ENSG00000133110 | perostin Source HGNC Symbol Acc HGNC 16953                                        |
| F07      | SBH0080420 | ENST00000348225.6  | PTN     | ENSG00000105894 | pleiotrophin Source HGNC Symbol Acc HGNC 9630                                     |
| F08      | SBH0302871 | ENST00000237696.10 | RARRES1 | ENSG00000118849 | retinoic acid receptor responder 1 Source HGNC Symbol Acc HGNC 9867               |
| F09      | SBH0462049 | ENST00000359365.8  | RASSF1  | ENSG00000068028 | Ras association domain family member 1 Source HGNC Symbol Acc HGNC 9882           |
| F10      | SBH0543746 | ENST00000638118.1  | REN     | ENSG00000143839 | renin Source HGNC Symbol Acc HGNC 9958                                            |

| Position | Assay      | Name              | Symbol   | Ensembl ID      | Description                                                                                       |
|----------|------------|-------------------|----------|-----------------|---------------------------------------------------------------------------------------------------|
| F11      | SBH0428400 | ENST00000486085.5 | RTN4     | ENSG00000115310 | reticulon 4 Source HGNC Symbol Acc HGNC 14085                                                     |
| F12      | SBH0319479 | ENST00000292169.5 | S100A1   | ENSG00000160678 | S100 calcium binding protein A1 Source HGNC Symbol Acc HGNC 10486                                 |
| G01      | SBH0032295 | ENST00000393078.4 | SERPINA3 | ENSG00000196136 | serpin family A member 3 Source HGNC Symbol Acc HGNC 16                                           |
| G02      | SBH1220395 | ENST00000436072.7 | SFRP4    | ENSG00000106483 | secreted frizzled related protein 4 Source HGNC Symbol Acc HGNC 10778                             |
| G03      | SBH0109503 | ENST00000560692.5 | SLC12A1  | ENSG00000074803 | solute carrier family 12 member 1 Source HGNC Symbol Acc HGNC 10910                               |
| G04      | SBH0118819 | ENST00000394991.7 | SNCA     | ENSG00000145335 | synuclein alpha Source HGNC Symbol Acc HGNC 11138                                                 |
| G05      | SBH0134045 | ENST00000394945.6 | SPOCK1   | ENSG00000152377 | SPARC (osteonectin), cwcv and kazal like domains proteoglycan 1 Source HGNC Symbol Acc HGNC 11251 |
| G06      | SBH0333289 | ENST00000361099.7 | STAT1    | ENSG00000115415 | signal transducer and activator of transcription 1 Source HGNC Symbol Acc HGNC 11362              |
| G07      | SBH0089633 | ENST00000356073.8 | TCF4     | ENSG00000196628 | transcription factor 4 Source HGNC Symbol Acc HGNC 11634                                          |
| G08      | SBH0457929 | ENST00000366787.7 | THBS2    | ENSG00000186340 | thrombospondin 2 Source HGNC Symbol Acc HGNC 11786                                                |
| G09      | SBH0283529 | ENST00000344887.9 | TNNI3    | ENSG00000129991 | troponin I3, cardiac type Source NCBI gene Acc 7137                                               |
| G10      | SBH0423442 | ENST00000360372.8 | TNNT2    | ENSG00000118194 | troponin T2, cardiac type Source HGNC Symbol Acc HGNC 11949                                       |
| G11      | SBH0421370 | ENST00000577958.1 | UBB      | ENSG00000170315 | ubiquitin B Source HGNC Symbol Acc HGNC 12463                                                     |
| G12      | SBH0382988 | ENST00000436448.1 | ZYX      | ENSG00000159840 | zyxin Source HGNC Symbol Acc HGNC 13200                                                           |
| 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 $\mu$ 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.

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.

Trademarks: QIAGEN®, LNA®, QuantiNova®, Sample to Insight® (QIAGEN Group); SYBR® (Life Technologies Corp.). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, are not to be considered unprotected by law.

09/2019 © 2019 QIAGEN, all rights reserved.