

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

## Human Mesenchymal Stem Cells

Cat. no. 249950 SBHS-082ZR

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 | ABCB1 | ACTA2  | ALCAM | ANPEP | ANXA5  | BDNF  | BGLAP   | BMP2  | BMP4   | BMP6   | BMP7  | CASP3  |
| B | CD44  | COL1A1 | CSF2  | CSF3  | CTNNA1 | EGF   | ENG     | ERBB2 | FGF10  | FGF2   | FUT1  | FUT4   |
| C | FZD9  | GDF15  | GDF5  | GDF6  | GDF7   | GTF3A | HAT1    | HDAC1 | HGF    | HNF1A  | ICAM1 | IFNG   |
| D | IGF1  | IL10   | IL1B  | IL6   | INS    | ITGA6 | ITGAV   | ITGAX | ITGB1  | JAG1   | KAT2B | KDR    |
| E | KITLG | LIF    | MCAM  | MMP2  | NES    | NGFR  | NOTCH1  | NTSE  | NUDT6  | PDGFRB | PIGS  | POU5F1 |
| F | PPARG | PROM1  | PTK2  | PTPRC | RHOA   | RUNX2 | SLC17A5 | SMAD4 | SMURF1 | SMURF2 | SOX2  | SOX9   |
| G | TBX5  | TERT   | TGFB1 | TGFB3 | THY1   | TNF   | VCAM1   | VEGFA | VIM    | WWF    | WNT3A | ZFP42  |
| 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      | SBH0346091 | ENST00000622132.4  | ABCB1  | ENSG00000085563 | ATP binding cassette subfamily B member 1 Source HGNC Symbol Acc HGNC 40   |
| A02      | SBH0247260 | ENST00000224784.10 | ACTA2  | ENSG00000107796 | actin, alpha 2, smooth muscle, aorta Source HGNC Symbol Acc HGNC 130       |
| A03      | SBH0246648 | ENST00000481337.5  | ALCAM  | ENSG00000170017 | activated leukocyte cell adhesion molecule Source HGNC Symbol Acc HGNC 400 |
| A04      | SBH1219742 | ENST00000300060.7  | ANPEP  | ENSG00000166825 | alanyl aminopeptidase, membrane Source HGNC Symbol Acc HGNC 500            |
| A05      | SBH1219743 | ENST00000501272.6  | ANXA5  | ENSG00000164111 | annexin A5 Source HGNC Symbol Acc HGNC 543                                 |
| A06      | SBH0006040 | ENST00000525528.1  | BDNF   | ENSG00000176697 | brain derived neurotrophic factor Source HGNC Symbol Acc HGNC 1033         |
| A07      | SBH1219793 | ENST00000368272.5  | BGLAP  | ENSG00000242252 | bone gamma-carboxyglutamate protein Source HGNC Symbol Acc HGNC 1043       |
| A08      | SBH1219802 | ENST00000378827.5  | BMP2   | ENSG00000125845 | bone morphogenetic protein 2 Source HGNC Symbol Acc HGNC 1069              |
| A09      | SBH0613995 | ENST00000417573.5  | BMP4   | ENSG00000125378 | bone morphogenetic protein 4 Source HGNC Symbol Acc HGNC 1071              |
| A10      | SBH1219805 | ENST00000283147.7  | BMP6   | ENSG00000153162 | bone morphogenetic protein 6 Source HGNC Symbol Acc HGNC 1073              |
| A11      | SBH1219806 | ENST00000450594.6  | BMP7   | ENSG00000101144 | bone morphogenetic protein 7 Source HGNC Symbol Acc HGNC 1074              |
| A12      | SBH1219824 | ENST00000308394.9  | CASP3  | ENSG00000164305 | caspase 3 Source HGNC Symbol Acc HGNC 1504                                 |
| B01      | SBH0074994 | ENST00000428726.7  | CD44   | ENSG00000026508 | CD44 molecule (Indian blood group) Source HGNC Symbol Acc HGNC 1681        |
| B02      | SBH0268763 | ENST00000225964.9  | COL1A1 | ENSG00000108821 | collagen type I alpha 1 chain Source HGNC Symbol Acc HGNC 2197             |
| B03      | SBH1219914 | ENST00000296871.4  | CSF2   | ENSG00000164400 | colony stimulating factor 2 Source HGNC Symbol Acc HGNC 2434               |
| B04      | SBH0378721 | ENST00000225474.6  | CSF3   | ENSG00000108342 | colony stimulating factor 3 Source HGNC Symbol Acc HGNC 2438               |
| B05      | SBH0588482 | ENST00000396183.7  | CTNNB1 | ENSG00000168036 | catenin beta 1 Source HGNC Symbol Acc HGNC 2514                            |
| B06      | SBH0321686 | ENST00000265171.9  | EGF    | ENSG00000138798 | epidermal growth factor Source HGNC Symbol Acc HGNC 3229                   |
| B07      | SBH1219975 | ENST00000480266.5  | ENG    | ENSG00000106991 | endoglin Source HGNC Symbol Acc HGNC 3349                                  |
| B08      | SBH0056013 | ENST00000269571.9  | ERBB2  | ENSG00000141736 | erb-b2 receptor tyrosine kinase 2 Source HGNC Symbol Acc HGNC 3430         |
| B09      | SBH0452984 | ENST00000264664.4  | FGF10  | ENSG00000070193 | fibroblast growth factor 10 Source HGNC Symbol Acc HGNC 3666               |
| B10      | SBH1220000 | ENST00000264498.7  | FGF2   | ENSG00000138685 | fibroblast growth factor 2 Source HGNC Symbol Acc HGNC 3676                |
| B11      | SBH0495291 | ENST00000601988.1  | FUT1   | ENSG00000174951 | fucosyltransferase 1 (H blood group) Source HGNC Symbol Acc HGNC 4012      |
| B12      | SBH0522842 | ENST00000358752.3  | FUT4   | ENSG00000196371 | fucosyltransferase 4 Source HGNC Symbol Acc HGNC 4015                      |
| C01      | SBH0166208 | ENST00000344575.4  | FZD9   | ENSG00000188763 | frizzled class receptor 9 Source HGNC Symbol Acc HGNC 4047                 |
| C02      | SBH0038583 | ENST00000604609.2  | GDF15  | ENSG00000130513 | growth differentiation factor 15 Source HGNC Symbol Acc HGNC 30142         |
| C03      | SBH1220027 | ENST00000374372.1  | GDF5   | ENSG00000125965 | growth differentiation factor 5 Source HGNC Symbol Acc HGNC 4220           |
| C04      | SBH1220028 | ENST00000287020.7  | GDF6   | ENSG00000156466 | growth differentiation factor 6 Source HGNC Symbol Acc HGNC 4221           |
| C05      | SBH1220029 | ENST00000272224.5  | GDF7   | ENSG00000143869 | growth differentiation factor 7 Source HGNC Symbol Acc HGNC 4222           |
| C06      | SBH0321957 | ENST00000419181.5  | GTF3A  | ENSG00000122034 | general transcription factor IIIA Source HGNC Symbol Acc HGNC 4662         |
| C07      | SBH1220047 | ENST00000264108.5  | HAT1   | ENSG00000128708 | histone acetyltransferase 1 Source HGNC Symbol Acc HGNC 4821               |
| C08      | SBH0527067 | ENST00000472928.5  | HDAC1  | ENSG00000116478 | histone deacetylase 1 Source HGNC Symbol Acc HGNC 4852                     |
| C09      | SBH1220058 | ENST00000457544.7  | HGF    | ENSG00000019991 | hepatocyte growth factor Source HGNC Symbol Acc HGNC 4893                  |
| C10      | SBH0525478 | ENST00000560968.5  | HNF1A  | ENSG00000135100 | HNF1 homeobox A Source HGNC Symbol Acc HGNC 11621                          |
|          |            | ENST00000264       |        | ENSG000000      |                                                                            |

| Position | Assay      | Name               | Symbol  | Ensembl ID      | Description                                                                               |
|----------|------------|--------------------|---------|-----------------|-------------------------------------------------------------------------------------------|
| C11      | SBH1220076 | 832.8              | ICAM1   | 090339          | intercellular adhesion molecule 1 Source HGNC Symbol Acc HGNC 5344                        |
| C12      | SBH1220090 | ENST00000229135.4  | IFNG    | ENSG00000111537 | interferon gamma Source HGNC Symbol Acc HGNC 5438                                         |
| D01      | SBH1220091 | ENST00000337514.10 | IGF1    | ENSG00000017427 | insulin like growth factor 1 Source HGNC Symbol Acc HGNC 5464                             |
| D02      | SBH1220095 | ENST00000423557.1  | IL10    | ENSG00000136634 | interleukin 10 Source HGNC Symbol Acc HGNC 5962                                           |
| D03      | SBH0079231 | ENST00000263341.6  | IL1B    | ENSG00000125538 | interleukin 1 beta Source HGNC Symbol Acc HGNC 5992                                       |
| D04      | SBH1220111 | ENST00000401630.7  | IL6     | ENSG00000136244 | interleukin 6 Source HGNC Symbol Acc HGNC 6018                                            |
| D05      | SBH0403664 | ENST00000250971.7  | INS     | ENSG00000254647 | insulin Source HGNC Symbol Acc HGNC 6081                                                  |
| D06      | SBH0096168 | ENST00000264107.11 | ITGA6   | ENSG00000091409 | integrin subunit alpha 6 Source HGNC Symbol Acc HGNC 6142                                 |
| D07      | SBH0064907 | ENST00000460641.1  | ITGAV   | ENSG00000138448 | integrin subunit alpha V Source HGNC Symbol Acc HGNC 6150                                 |
| D08      | SBH0462220 | ENST00000268296.8  | ITGAX   | ENSG00000140678 | integrin subunit alpha X Source HGNC Symbol Acc HGNC 6152                                 |
| D09      | SBH1220136 | ENST00000302278.8  | ITGB1   | ENSG00000150093 | integrin subunit beta 1 Source HGNC Symbol Acc HGNC 6153                                  |
| D10      | SBH0407654 | ENST00000254958.10 | JAG1    | ENSG00000101384 | jagged 1 Source HGNC Symbol Acc HGNC 6188                                                 |
| D11      | SBH1220145 | ENST00000263754.5  | KAT2B   | ENSG00000114166 | lysine acetyltransferase 2B Source HGNC Symbol Acc HGNC 8638                              |
| D12      | SBH0020198 | ENST00000263923.5  | KDR     | ENSG00000128052 | kinase insert domain receptor Source HGNC Symbol Acc HGNC 6307                            |
| E01      | SBH0076738 | ENST00000644744.1  | KITLG   | ENSG00000049130 | KIT ligand Source HGNC Symbol Acc HGNC 6343                                               |
| E02      | SBH1220172 | ENST00000249075.4  | LIF     | ENSG00000128342 | LIF, interleukin 6 family cytokine Source HGNC Symbol Acc HGNC 6596                       |
| E03      | SBH0369285 | ENST00000264036.6  | MCAM    | ENSG00000076706 | melanoma cell adhesion molecule Source NCBI gene Acc 4162                                 |
| E04      | SBH1220222 | ENST00000570308.5  | MMP2    | ENSG00000087245 | matrix metalloproteinase 2 Source HGNC Symbol Acc HGNC 7166                               |
| E05      | SBH0585490 | ENST00000368223.4  | NES     | ENSG00000132688 | nestin Source HGNC Symbol Acc HGNC 7756                                                   |
| E06      | SBH0556664 | ENST00000504201.1  | NGFR    | ENSG00000064300 | nerve growth factor receptor Source HGNC Symbol Acc HGNC 7809                             |
| E07      | SBH0615258 | ENST00000277541.7  | NOTCH1  | ENSG00000148400 | notch 1 Source HGNC Symbol Acc HGNC 7881                                                  |
| E08      | SBH0237971 | ENST00000437581.1  | NT5E    | ENSG00000135318 | 5'-nucleotidase ecto Source HGNC Symbol Acc HGNC 8021                                     |
| E09      | SBH0508734 | ENST00000510735.1  | NUDT6   | ENSG00000170917 | nudix hydrolase 6 Source HGNC Symbol Acc HGNC 8053                                        |
| E10      | SBH1220293 | ENST00000261799.9  | PDGFRB  | ENSG00000113721 | platelet derived growth factor receptor beta Source HGNC Symbol Acc HGNC 8804             |
| E11      | SBH0240440 | ENST00000484580.6  | PIGS    | ENSG00000087111 | phosphatidylinositol glycan anchor biosynthesis class S Source HGNC Symbol Acc HGNC 14937 |
| E12      | SBH1225387 | ENST00000513407.1  | POU5F1  | ENSG00000204531 | POU class 5 homeobox 1 Source HGNC Symbol Acc HGNC 9221                                   |
| F01      | SBH0521265 | ENST00000652522.1  | PPARG   | ENSG00000132170 | peroxisome proliferator activated receptor gamma Source HGNC Symbol Acc HGNC 9236         |
| F02      | SBH0498976 | ENST00000510224.5  | PROM1   | ENSG00000007062 | prominin 1 Source HGNC Symbol Acc HGNC 9454                                               |
| F03      | SBH1220345 | ENST00000523539.5  | PTK2    | ENSG00000169398 | protein tyrosine kinase 2 Source HGNC Symbol Acc HGNC 9611                                |
| F04      | SBH0081266 | ENST00000491302.1  | PTPRC   | ENSG00000081237 | protein tyrosine phosphatase, receptor type C Source HGNC Symbol Acc HGNC 9666            |
| F05      | SBH1220367 | ENST00000418115.6  | RHOA    | ENSG00000067560 | ras homolog family member A Source HGNC Symbol Acc HGNC 667                               |
| F06      | SBH0662907 | ENST00000465038.6  | RUNX2   | ENSG00000124813 | runt related transcription factor 2 Source HGNC Symbol Acc HGNC 10472                     |
| F07      | SBH0443978 | ENST00000481996.1  | SLC17A5 | ENSG00000119899 | solute carrier family 17 member 5 Source HGNC Symbol Acc HGNC 10933                       |
| F08      | SBH1220406 | ENST00000588745.5  | SMAD4   | ENSG00000141646 | SMAD family member 4 Source HGNC Symbol Acc HGNC 6770                                     |
| F09      | SBH0364195 | ENST00000361125.1  | SMURF1  | ENSG00000198742 | SMAD specific E3 ubiquitin protein ligase 1 Source HGNC Symbol Acc HGNC 16807             |
| F10      | SBH0110570 | ENST00000585301.1  | SMURF2  | ENSG00000108854 | SMAD specific E3 ubiquitin protein ligase 2 Source HGNC Symbol Acc HGNC 16809             |

| Position | Assay      | Name               | Symbol | Ensembl ID      | Description                                                                  |
|----------|------------|--------------------|--------|-----------------|------------------------------------------------------------------------------|
| F11      | SBH0499815 | ENST00000325404.3  | SOX2   | ENSG00000181449 | SRY-box 2 Source HGNC Symbol Acc HGNC 11195                                  |
| F12      | SBH0112513 | ENST00000245479.3  | SOX9   | ENSG00000125398 | SRY-box 9 Source HGNC Symbol Acc HGNC 11204                                  |
| G01      | SBH0526624 | ENST00000552726.1  | TBX5   | ENSG00000089225 | T-box 5 Source HGNC Symbol Acc HGNC 11604                                    |
| G02      | SBH0606096 | ENST00000334602.10 | TERT   | ENSG00000164362 | telomerase reverse transcriptase Source HGNC Symbol Acc HGNC 11730           |
| G03      | SBH1220443 | ENST00000598758.5  | TGFB1  | ENSG00000105329 | transforming growth factor beta 1 Source NCBI gene Acc 7040                  |
| G04      | SBH0179529 | ENST00000238682.7  | TGFB3  | ENSG00000119699 | transforming growth factor beta 3 Source HGNC Symbol Acc HGNC 11769          |
| G05      | SBH0336000 | ENST00000527590.5  | THY1   | ENSG00000154096 | Thy-1 cell surface antigen Source HGNC Symbol Acc HGNC 11801                 |
| G06      | SBH1220471 | ENST00000449264.3  | TNF    | ENSG00000232810 | tumor necrosis factor Source HGNC Symbol Acc HGNC 11892                      |
| G07      | SBH1220515 | ENST00000294728.7  | VCAM1  | ENSG00000162692 | vascular cell adhesion molecule 1 Source HGNC Symbol Acc HGNC 12663          |
| G08      | SBH0420322 | ENST00000425836.6  | VEGFA  | ENSG00000112715 | vascular endothelial growth factor A Source HGNC Symbol Acc HGNC 12680       |
| G09      | SBH1220518 | ENST00000544301.7  | VIM    | ENSG00000026025 | vimentin Source HGNC Symbol Acc HGNC 12692                                   |
| G10      | SBH1220522 | ENST00000261405.9  | VWF    | ENSG00000110799 | von Willebrand factor Source HGNC Symbol Acc HGNC 12726                      |
| G11      | SBH1220532 | ENST00000284523.2  | WNT3A  | ENSG00000154342 | Wnt family member 3A Source HGNC Symbol Acc HGNC 15983                       |
| G12      | SBH0270230 | ENST00000326866.5  | ZFP42  | ENSG00000179059 | ZFP42 zinc finger protein Source HGNC Symbol Acc HGNC 30949                  |
| 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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