

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

## Human JAK / STAT Signaling Pathway

Cat. no. 249950 SBHS-039ZR

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 | A2M    | AKT1   | BCL2L1 | CCND1 | CDKN1A | CEBPB  | CEBPD  | CRK   | CRP    | CSF1R | CYCL9  | EGFR  |
| B | EPOR   | F2     | F2R    | FAS   | FCER2  | FCGR1A | GATA3  | GHR   | GRB2   | HMG1A | IFNAR1 | IFNG  |
| C | IFNGR1 | IL10RA | IL20   | IL2RA | IL2RG  | IL4    | IL4R   | IL6ST | INSR   | IRF1  | IRF9   | ISG15 |
| D | JAK1   | JAK2   | JAK3   | JUN   | JUNB   | LRG1   | MCL1   | MPL   | MYC    | NFKB1 | NOS2   | NR3C1 |
| E | OAS1   | OSM    | PDGFRA | PIAS1 | PIAS2  | PRL    | PRLR   | PTPN1 | PTPN11 | PTPRC | SH2B1  | SMAD1 |
| F | SMAD2  | SMAD3  | SMAD4  | SMAD5 | SOCS1  | SOCS2  | SOCS3  | SOCS4 | SOCS5  | SP1   | SP11   | SRC   |
| G | STAM   | STAT1  | STAT2  | STAT3 | STAT4  | STAT5A | STAT5B | STAT6 | STUB1  | TYK2  | USF1   | YY1   |
| 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      | SBH0203648 | ENST00000472360.1 | A2M    | ENSG00000175899  | alpha-2-macroglobulin Source HGNC Symbol Acc HGNC 7                           |
| A02      | SBH0095396 | ENST00000555528.5 | AKT1   | ENSG00000142208  | AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391                 |
| A03      | SBH0216029 | ENST00000450273.1 | BCL2L1 | ENSG00000171552  | BCL2 like 1 Source HGNC Symbol Acc HGNC 992                                   |
| A04      | SBH0434090 | ENST00000227507.2 | CCND1  | ENSG00000110092  | cyclin D1 Source HGNC Symbol Acc HGNC 1582                                    |
| A05      | SBH0608500 | ENST00000244741.9 | CDKN1A | ENSG00000124762  | cyclin dependent kinase inhibitor 1A Source HGNC Symbol Acc HGNC 1784         |
| A06      | SBH0569983 | ENST00000303004.4 | CEBPB  | ENSG00000172216  | CCAAT enhancer binding protein beta Source HGNC Symbol Acc HGNC 1834          |
| A07      | SBH0227697 | ENST00000408965.3 | CEBPD  | ENSG00000221869  | CCAAT enhancer binding protein delta Source HGNC Symbol Acc HGNC 1835         |
| A08      | SBH0257676 | ENST00000574295.1 | CRK    | ENSG00000167193  | CRK proto-oncogene, adaptor protein Source HGNC Symbol Acc HGNC 2362          |
| A09      | SBH0187022 | ENST00000255030.9 | CRP    | ENSG00000132693  | C-reactive protein Source HGNC Symbol Acc HGNC 2367                           |
| A10      | SBH0210500 | ENST00000286301.7 | CSF1R  | ENSG00000182578  | colony stimulating factor 1 receptor Source HGNC Symbol Acc HGNC 2433         |
| A11      | SBH0383348 | ENST00000264888.5 | CXCL9  | ENSG00000138755  | C-X-C motif chemokine ligand 9 Source HGNC Symbol Acc HGNC 7098               |
| A12      | SBH1219970 | ENST00000454757.6 | EGFR   | ENSG00000146648  | epidermal growth factor receptor Source HGNC Symbol Acc HGNC 3236             |
| B01      | SBH0577732 | ENST00000592375.6 | EPOR   | ENSG00000187266  | erythropoietin receptor Source HGNC Symbol Acc HGNC 3416                      |
| B02      | SBH0051863 | ENST00000442468.1 | F2     | ENSG00000180210  | coagulation factor II, thrombin Source HGNC Symbol Acc HGNC 3535              |
| B03      | SBH1219989 | ENST00000319211.5 | F2R    | ENSG00000181104  | coagulation factor II thrombin receptor Source HGNC Symbol Acc HGNC 3537      |
| B04      | SBH1219994 | ENST00000652046.1 | FAS    | ENSG00000206103  | Fas cell surface death receptor Source HGNC Symbol Acc HGNC 11920             |
| B05      | SBH0569109 | ENST00000346664.9 | FCER2  | ENSG00000104921  | Fc fragment of IgE receptor II Source HGNC Symbol Acc HGNC 3612               |
| B06      | SBH0043666 | ENST00000444948.5 | FCGR1A | ENSG00000150337  | Fc fragment of IgG receptor Ia Source HGNC Symbol Acc HGNC 3613               |
| B07      | SBH0349339 | ENST00000346208.4 | GATA3  | ENSG00000107485  | GATA binding protein 3 Source HGNC Symbol Acc HGNC 4172                       |
| B08      | SBH0038120 | ENST00000230882.9 | GHR    | ENSG00000112964  | growth hormone receptor Source HGNC Symbol Acc HGNC 4263                      |
| B09      | SBH1220038 | ENST00000392563.5 | GRB2   | ENSG00000177885  | growth factor receptor bound protein 2 Source HGNC Symbol Acc HGNC 4566       |
| B10      | SBH0403034 | ENST00000311487.9 | HMGA1  | ENSG00000137309  | high mobility group AT-hook 1 Source HGNC Symbol Acc HGNC 5010                |
| B11      | SBH1220087 | ENST00000442071.2 | IFNAR1 | ENSG00000142166  | interferon alpha and beta receptor subunit 1 Source HGNC Symbol Acc HGNC 5432 |
| B12      | SBH1220090 | ENST00000229135.4 | IFNG   | ENSG00000111537  | interferon gamma Source HGNC Symbol Acc HGNC 5438                             |
| C01      | SBH0279641 | ENST00000367739.8 | IFNGR1 | ENSG000002027697 | interferon gamma receptor 1 Source HGNC Symbol Acc HGNC 5439                  |
| C02      | SBH0388417 | ENST00000227752.7 | IL10RA | ENSG00000110324  | interleukin 10 receptor subunit alpha Source HGNC Symbol Acc HGNC 5964        |
| C03      | SBH0348023 | ENST00000391930.3 | IL20   | ENSG00000162891  | interleukin 20 Source HGNC Symbol Acc HGNC 6002                               |
| C04      | SBH0567688 | ENST00000447847.1 | IL2RA  | ENSG00000134460  | interleukin 2 receptor subunit alpha Source HGNC Symbol Acc HGNC 6008         |
| C05      | SBH0005272 | ENST00000487883.1 | IL2RG  | ENSG00000147168  | interleukin 2 receptor subunit gamma Source HGNC Symbol Acc HGNC 6010         |
| C06      | SBH1220109 | ENST00000350025.2 | IL4    | ENSG00000113520  | interleukin 4 Source HGNC Symbol Acc HGNC 6014                                |
| C07      | SBH0492526 | ENST00000565915.5 | IL4R   | ENSG000002077238 | interleukin 4 receptor Source HGNC Symbol Acc HGNC 6015                       |
| C08      | SBH0280973 | ENST00000503773.6 | IL6ST  | ENSG00000134352  | interleukin 6 signal transducer Source HGNC Symbol Acc HGNC 6021              |
| C09      | SBH0198962 | ENST00000600492.1 | INSR   | ENSG00000171105  | insulin receptor Source HGNC Symbol Acc HGNC 6091                             |
| C10      | SBH1220122 | ENST00000245414.9 | IRF1   | ENSG00000125347  | interferon regulatory factor 1 Source HGNC Symbol Acc HGNC 6116               |
|          |            | ENST00000396      |        | ENSG000000       |   |

| Position | Assay      | Name               | Symbol | Ensembl ID      | Description   |
|----------|------------|--------------------|--------|-----------------|---|
| C11      | SBH1220126 | 864.7              | IRF9   | 213928          | interferon regulatory factor 9 Source HGNC Symbol Acc HGNC 6131                         |
| C12      | SBH0407556 | ENST00000649529.1  | ISG15  | ENSG00000187608 | ISG15 ubiquitin-like modifier Source HGNC Symbol Acc HGNC 4053                          |
| D01      | SBH1220142 | ENST00000342505.5  | JAK1   | ENSG00000162434 | Janus kinase 1 Source HGNC Symbol Acc HGNC 6190   |
| D02      | SBH0334185 | ENST00000381652.3  | JAK2   | ENSG00000096968 | Janus kinase 2 Source HGNC Symbol Acc HGNC 6192   |
| D03      | SBH0438127 | ENST00000527670.5  | JAK3   | ENSG00000105639 | Janus kinase 3 Source HGNC Symbol Acc HGNC 6193   |
| D04      | SBH0613340 | ENST00000371222.3  | JUN    | ENSG00000177606 | Jun proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 6204  |
| D05      | SBH1220143 | ENST00000302754.6  | JUNB   | ENSG00000171223 | JunB proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 6205 |
| D06      | SBH1220176 | ENST00000306390.7  | LRG1   | ENSG00000171236 | leucine rich alpha-2-glycoprotein 1 Source HGNC Symbol Acc HGNC 29480                   |
| D07      | SBH1220199 | ENST00000620947.4  | MCL1   | ENSG00000143384 | MCL1, BCL2 family apoptosis regulator Source HGNC Symbol Acc HGNC 6943                  |
| D08      | SBH0641426 | ENST00000413998.7  | MPL    | ENSG00000117400 | MPL proto-oncogene, thrombopoietin receptor Source HGNC Symbol Acc HGNC 7217            |
| D09      | SBH0426145 | ENST00000524013.1  | MYC    | ENSG00000136997 | MYC proto-oncogene, bHLH transcription factor Source HGNC Symbol Acc HGNC 7553          |
| D10      | SBH1220264 | ENST00000651197.1  | NFKB1  | ENSG00000109320 | nuclear factor kappa B subunit 1 Source HGNC Symbol Acc HGNC 7794                       |
| D11      | SBH0408796 | ENST00000313735.10 | NOS2   | ENSG00000007171 | nitric oxide synthase 2 Source HGNC Symbol Acc HGNC 7873                                |
| D12      | SBH1220280 | ENST00000652686.1  | NR3C1  | ENSG00000113580 | nuclear receptor subfamily 3 group C member 1 Source HGNC Symbol Acc HGNC 7978          |
| E01      | SBH1220283 | ENST00000452357.6  | OAS1   | ENSG00000089127 | 2'-5'-oligoadenylate synthetase 1 Source HGNC Symbol Acc HGNC 8086                      |
| E02      | SBH1220287 | ENST00000215781.3  | OSM    | ENSG00000099985 | oncostatin M Source HGNC Symbol Acc HGNC 8506   |
| E03      | SBH1220292 | ENST00000257290.10 | PDGFRA | ENSG00000134853 | platelet derived growth factor receptor alpha Source HGNC Symbol Acc HGNC 8803          |
| E04      | SBH0637544 | ENST00000562190.1  | PIAS1  | ENSG00000033800 | protein inhibitor of activated STAT 1 Source HGNC Symbol Acc HGNC 2752                  |
| E05      | SBH0433845 | ENST00000592212.5  | PIAS2  | ENSG00000078043 | protein inhibitor of activated STAT 2 Source HGNC Symbol Acc HGNC 17311                 |
| E06      | SBH0553464 | ENST00000615510.4  | PRL    | ENSG00000172179 | prolactin Source HGNC Symbol Acc HGNC 9445  |
| E07      | SBH0399362 | ENST00000511486.5  | PRLR   | ENSG00000113494 | prolactin receptor Source HGNC Symbol Acc HGNC 9446                                     |
| E08      | SBH0048297 | ENST00000541713.5  | PTPN1  | ENSG00000196396 | protein tyrosine phosphatase, non-receptor type 1 Source HGNC Symbol Acc HGNC 9642      |
| E09      | SBH0531473 | ENST00000392597.5  | PTPN11 | ENSG00000179295 | protein tyrosine phosphatase, non-receptor type 11 Source HGNC Symbol Acc HGNC 9644     |
| E10      | SBH0081266 | ENST00000491302.1  | PTPRC  | ENSG00000081237 | protein tyrosine phosphatase, receptor type C Source HGNC Symbol Acc HGNC 9666          |
| E11      | SBH0381451 | ENST00000538342.5  | SH2B1  | ENSG00000178188 | SH2B adaptor protein 1 Source HGNC Symbol Acc HGNC 30417                                |
| E12      | SBH1220404 | ENST00000394092.6  | SMAD1  | ENSG00000170365 | SMAD family member 1 Source HGNC Symbol Acc HGNC 6767                                   |
| F01      | SBH1220405 | ENST00000262160.11 | SMAD2  | ENSG00000175387 | SMAD family member 2 Source HGNC Symbol Acc HGNC 6768                                   |
| F02      | SBH0216540 | ENST00000558428.5  | SMAD3  | ENSG00000166949 | SMAD family member 3 Source HGNC Symbol Acc HGNC 6769                                   |
| F03      | SBH1220406 | ENST00000588745.5  | SMAD4  | ENSG00000141646 | SMAD family member 4 Source HGNC Symbol Acc HGNC 6770                                   |
| F04      | SBH1220407 | ENST00000545279.6  | SMAD5  | ENSG00000113658 | SMAD family member 5 Source HGNC Symbol Acc HGNC 6771                                   |
| F05      | SBH1220412 | ENST00000644787.1  | SOCS1  | ENSG00000185338 | suppressor of cytokine signaling 1 Source HGNC Symbol Acc HGNC 19383                    |
| F06      | SBH0278324 | ENST00000549122.5  | SOCS2  | ENSG00000120833 | suppressor of cytokine signaling 2 Source HGNC Symbol Acc HGNC 19382                    |
| F07      | SBH1220413 | ENST00000330871.3  | SOCS3  | ENSG00000184557 | suppressor of cytokine signaling 3 Source HGNC Symbol Acc HGNC 19391                    |
| F08      | SBH0346541 | ENST00000339298.2  | SOCS4  | ENSG00000180008 | suppressor of cytokine signaling 4 Source HGNC Symbol Acc HGNC 19392                    |
| F09      | SBH0252460 | ENST00000306503.5  | SOCS5  | ENSG00000171150 | suppressor of cytokine signaling 5 Source HGNC Symbol Acc HGNC 16852                    |
| F10      | SBH1220419 | ENST00000426431.2  | SP1    | ENSG00000185591 | Sp1 transcription factor Source HGNC Symbol Acc HGNC 11205                              |

| Position | Assay      | Name              | Symbol | Ensembl ID      | Description   |
|----------|------------|-------------------|--------|-----------------|---|
| F11      | SBH0231963 | ENST00000378538.7 | SP11   | ENSG00000066336 | Spi-1 proto-oncogene Source HGNC Symbol Acc HGNC 11241                                |
| F12      | SBH0514958 | ENST00000489153.1 | SRC    | ENSG00000197122 | SRC proto-oncogene, non-receptor tyrosine kinase Source HGNC Symbol Acc HGNC 11283    |
| G01      | SBH0556219 | ENST00000445846.1 | STAM   | ENSG00000136738 | signal transducing adaptor molecule Source HGNC Symbol Acc HGNC 11357                 |
| G02      | SBH0333289 | ENST00000361099.7 | STAT1  | ENSG00000115415 | signal transducer and activator of transcription 1 Source HGNC Symbol Acc HGNC 11362  |
| G03      | SBH1220422 | ENST00000314128.9 | STAT2  | ENSG00000170581 | signal transducer and activator of transcription 2 Source HGNC Symbol Acc HGNC 11363  |
| G04      | SBH0341614 | ENST00000404395.3 | STAT3  | ENSG00000168610 | signal transducer and activator of transcription 3 Source HGNC Symbol Acc HGNC 11364  |
| G05      | SBH1220423 | ENST00000392320.7 | STAT4  | ENSG00000138378 | signal transducer and activator of transcription 4 Source HGNC Symbol Acc HGNC 11365  |
| G06      | SBH0335854 | ENST00000345506.8 | STAT5A | ENSG00000126561 | signal transducer and activator of transcription 5A Source HGNC Symbol Acc HGNC 11366 |
| G07      | SBH0472958 | ENST00000481253.2 | STAT5B | ENSG00000173757 | signal transducer and activator of transcription 5B Source HGNC Symbol Acc HGNC 11367 |
| G08      | SBH1220424 | ENST00000300134.8 | STAT6  | ENSG00000166888 | signal transducer and activator of transcription 6 Source HGNC Symbol Acc HGNC 11368  |
| G09      | SBH0269639 | ENST00000564370.5 | STUB1  | ENSG00000103266 | STIP1 homology and U-box containing protein 1 Source HGNC Symbol Acc HGNC 11427       |
| G10      | SBH0311688 | ENST00000525621.5 | TYK2   | ENSG00000105397 | tyrosine kinase 2 Source HGNC Symbol Acc HGNC 12440                                   |
| G11      | SBH0321028 | ENST00000472217.1 | USF1   | ENSG00000158773 | upstream transcription factor 1 Source HGNC Symbol Acc HGNC 12593                     |
| G12      | SBH0101397 | ENST00000553625.5 | YY1    | ENSG00000100811 | YY1 transcription factor Source HGNC Symbol Acc HGNC 12856                            |
| 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.

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