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

# Human Dopamine & Serotonin Pathway

## Cat. no. 249950 SBHS-158ZR

## 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** for further details.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | ADCY1 | ADCY2 | ADCY3 | ADCY5 | ADRB1 | ADRB2 | GRK2 | GRK3 | AKT1 | AKT2 | AKT3 | ALOX12 |
| B | APP | ARRB1 | ARRB2 | BDNF | CASP3 | CDK5 | COMT | CREB1 | CYP2D6 | DBH | DDC | DRD1 |
| C | DRD2 | DRD3 | DRD4 | DRD5 | DUSP1 | EPHB1 | FOS | GDNF | GFAP | GRK4 | GRK5 | GRK6 |
| D | GSK3A | GSK3B | HTR1A | HTR1B | HTR1D | HTR1E | HTR1F | HTR2A | HTR2B | HTR2C | HTR3A | HTR3B |
| E | HTR4 | HTR5A | HTR6 | HTR7 | ITPR1 | MAOA | MAOB | MAPK1 | NR4A1 | NR4A3 | PDE10A | PDE4A |
| F | PDE4B | AC008397.2 | PDE4D | PDYN | PIK3CA | PIK3CG | PLA2G5 | PLCB1 | PLCB2 | PLCB3 | PPP1R1B | PRKACA |
| G | PTGS2 | SLC18A1 | SLC18A2 | SLC6A3 | SLC6A4 | SNCA | SNCAIP | SYN2 | TDO2 | TH | TPH1 | TPH2 |
| 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 | SBH0029402 | ENST00000646653.1 | ADCY1 | ENSG00000164742 | adenylate cyclase 1 Source HGNC Symbol Acc HGNC 232 |
| A02 | SBH0531641 | ENST00000493243.5 | ADCY2 | ENSG00000078295 | adenylate cyclase 2 Source HGNC Symbol Acc HGNC 233 |
| A03 | SBH0625641 | ENST00000455323.1 | ADCY3 | ENSG00000138031 | adenylate cyclase 3 Source HGNC Symbol Acc HGNC 234 |
| A04 | SBH0330011 | ENST00000466617.5 | ADCY5 | ENSG00000173175 | adenylate cyclase 5 Source HGNC Symbol Acc HGNC 236 |
| A05 | SBH0305943 | ENST00000369295.3 | ADRB1 | ENSG00000043591 | adrenoceptor beta 1 Source HGNC Symbol Acc HGNC 285 |
| A06 | SBH0519738 | ENST00000305988.5 | ADRB2 | ENSG00000169252 | adrenoceptor beta 2 Source HGNC Symbol Acc HGNC 286 |
| A07 | SBH0049742 | ENST00000530291.5 | GRK2 | ENSG00000173020 | G protein-coupled receptor kinase 2 Source HGNC Symbol Acc HGNC 289 |
| A08 | SBH0193530 | ENST00000455558.2 | GRK3 | ENSG00000100077 | G protein-coupled receptor kinase 3 Source HGNC Symbol Acc HGNC 290 |
| A09 | SBH0095396 | ENST00000555528.5 | AKT1 | ENSG00000142208 | AKT serine/threonine kinase 1 Source HGNC Symbol Acc HGNC 391 |
| A10 | SBH0364428 | ENST00000492463.6 | AKT2 | ENSG00000105221 | AKT serine/threonine kinase 2 Source HGNC Symbol Acc HGNC 392 |
| A11 | SBH0031667 | ENST00000463991.5 | AKT3 | ENSG00000117020 | AKT serine/threonine kinase 3 Source HGNC Symbol Acc HGNC 393 |
| A12 | SBH1219735 | ENST00000251535.11 | ALOX12 | ENSG00000108839 | arachidonate 12-lipoxygenase, 12S type Source HGNC Symbol Acc HGNC 429 |
| B01 | SBH1219749 | ENST00000348990.9 | APP | ENSG00000142192 | amyloid beta precursor protein Source HGNC Symbol Acc HGNC 620 |
| B02 | SBH0254247 | ENST00000533609.5 | ARRB1 | ENSG00000137486 | arrestin beta 1 Source HGNC Symbol Acc HGNC 711 |
| B03 | SBH0319642 | ENST00000574502.5 | ARRB2 | ENSG00000141480 | arrestin beta 2 Source HGNC Symbol Acc HGNC 712 |
| B04 | SBH0006040 | ENST00000525528.1 | BDNF | ENSG00000176697 | brain derived neurotrophic factor Source HGNC Symbol Acc HGNC 1033 |
| B05 | SBH1219824 | ENST00000308394.9 | CASP3 | ENSG00000164305 | caspase 3 Source HGNC Symbol Acc HGNC 1504 |
| B06 | SBH0103479 | ENST00000485972.6 | CDK5 | ENSG00000164885 | cyclin dependent kinase 5 Source HGNC Symbol Acc HGNC 1774 |
| B07 | SBH0154349 | ENST00000361682.10 | COMT | ENSG00000093010 | catechol-O-methyltransferase Source HGNC Symbol Acc HGNC 2228 |
| B08 | SBH0077258 | ENST00000353267.8 | CREB1 | ENSG00000118260 | cAMP responsive element binding protein 1 Source HGNC Symbol Acc HGNC 2345 |
| B09 | SBH0262798 | ENST00000359033.4 | CYP2D6 | ENSG00000100197 | cytochrome P450 family 2 subfamily D member 6 Source HGNC Symbol Acc HGNC 2625 |
| B10 | SBH0275682 | ENST00000393056.7 | DBH | ENSG00000123454 | dopamine beta-hydroxylase Source HGNC Symbol Acc HGNC 2689 |
| B11 | SBH0460522 | ENST00000444733.5 | DDC | ENSG00000132437 | dopa decarboxylase Source HGNC Symbol Acc HGNC 2719 |
| B12 | SBH0389175 | ENST00000393752.3 | DRD1 | ENSG00000184845 | dopamine receptor D1 Source HGNC Symbol Acc HGNC 3020 |
| C01 | SBH0344008 | ENST00000535984.1 | DRD2 | ENSG00000149295 | dopamine receptor D2 Source HGNC Symbol Acc HGNC 3023 |
| C02 | SBH0383975 | ENST00000383673.4 | DRD3 | ENSG00000151577 | dopamine receptor D3 Source HGNC Symbol Acc HGNC 3024 |
| C03 | SBH0506443 | ENST00000176183.5 | DRD4 | ENSG00000069696 | dopamine receptor D4 Source HGNC Symbol Acc HGNC 3025 |
| C04 | SBH0594176 | ENST00000304374.3 | DRD5 | ENSG00000169676 | dopamine receptor D5 Source HGNC Symbol Acc HGNC 3026 |
| C05 | SBH1219962 | ENST00000239223.4 | DUSP1 | ENSG00000120129 | dual specificity phosphatase 1 Source HGNC Symbol Acc HGNC 3064 |
| C06 | SBH0371410 | ENST00000482618.5 | EPHB1 | ENSG00000154928 | EPH receptor B1 Source HGNC Symbol Acc HGNC 3392 |
| C07 | SBH1220004 | ENST00000554617.1 | FOS | ENSG00000170345 | Fos proto-oncogene, AP-1 transcription factor subunit Source HGNC Symbol Acc HGNC 3796 |
| C08 | SBH0310916 | ENST00000502572.1 | GDNF | ENSG00000168621 | glial cell derived neurotrophic factor Source HGNC Symbol Acc HGNC 4232 |
| C09 | SBH0011470 | ENST00000639277.1 | GFAP | ENSG00000131095 | glial fibrillary acidic protein Source HGNC Symbol Acc HGNC 4235 |
| C10 | SBH0613344 | ENST00000504308.1 | GRK4 | ENSG00000125388 | G protein-coupled receptor kinase 4 Source HGNC Symbol Acc HGNC 4543 |
| | | ENST00000392 | | ENSG00000 | |

| Position | Assay | Name | Symbol | Ensembl ID | Description |
|---|---|---|---|---|---|
| C11 | SBH0470275 | 870.2 | GRK5 | 198873 | G protein-coupled receptor kinase 5 Source HGNC Symbol Acc HGNC 4544 |
| C12 | SBH0413448 | ENST00000355472.10 | GRK6 | ENSG00000198055 | G protein-coupled receptor kinase 6 Source HGNC Symbol Acc HGNC 4545 |
| D01 | SBH1220041 | ENST00000222330.8 | GSK3A | ENSG00000105723 | glycogen synthase kinase 3 alpha Source HGNC Symbol Acc HGNC 4616 |
| D02 | SBH0579883 | ENST00000316626.5 | GSK3B | ENSG00000082701 | glycogen synthase kinase 3 beta Source HGNC Symbol Acc HGNC 4617 |
| D03 | SBH0493351 | ENST00000506598.1 | HTR1A | ENSG00000178394 | 5-hydroxytryptamine receptor 1A Source HGNC Symbol Acc HGNC 5286 |
| D04 | SBH0198632 | ENST00000369947.4 | HTR1B | ENSG00000135312 | 5-hydroxytryptamine receptor 1B Source HGNC Symbol Acc HGNC 5287 |
| D05 | SBH0379050 | ENST00000374619.1 | HTR1D | ENSG00000179546 | 5-hydroxytryptamine receptor 1D Source HGNC Symbol Acc HGNC 5289 |
| D06 | SBH0372025 | ENST00000305344.7 | HTR1E | ENSG00000168830 | 5-hydroxytryptamine receptor 1E Source HGNC Symbol Acc HGNC 5291 |
| D07 | SBH0566583 | ENST00000319595.5 | HTR1F | ENSG00000179097 | 5-hydroxytryptamine receptor 1F Source HGNC Symbol Acc HGNC 5292 |
| D08 | SBH0547087 | ENST00000378688.8 | HTR2A | ENSG00000102468 | 5-hydroxytryptamine receptor 2A Source HGNC Symbol Acc HGNC 5293 |
| D09 | SBH0390590 | ENST00000258400.4 | HTR2B | ENSG00000135914 | 5-hydroxytryptamine receptor 2B Source HGNC Symbol Acc HGNC 5294 |
| D10 | SBH0560764 | ENST00000371950.3 | HTR2C | ENSG00000147246 | 5-hydroxytryptamine receptor 2C Source HGNC Symbol Acc HGNC 5295 |
| D11 | SBH0656917 | ENST00000510849.5 | HTR3A | ENSG00000166736 | 5-hydroxytryptamine receptor 3A Source HGNC Symbol Acc HGNC 5297 |
| D12 | SBH0219796 | ENST00000543092.1 | HTR3B | ENSG00000149305 | 5-hydroxytryptamine receptor 3B Source HGNC Symbol Acc HGNC 5298 |
| E01 | SBH0671263 | ENST00000521735.5 | HTR4 | ENSG00000164270 | 5-hydroxytryptamine receptor 4 Source HGNC Symbol Acc HGNC 5299 |
| E02 | SBH0294075 | ENST00000287907.3 | HTR5A | ENSG00000157219 | 5-hydroxytryptamine receptor 5A Source HGNC Symbol Acc HGNC 5300 |
| E03 | SBH0313684 | ENST00000289753.2 | HTR6 | ENSG00000158748 | 5-hydroxytryptamine receptor 6 Source HGNC Symbol Acc HGNC 5301 |
| E04 | SBH0162397 | ENST00000277874.10 | HTR7 | ENSG00000148680 | 5-hydroxytryptamine receptor 7 Source HGNC Symbol Acc HGNC 5302 |
| E05 | SBH0303285 | ENST00000649694.1 | ITPR1 | ENSG00000150995 | inositol 1,4,5-trisphosphate receptor type 1 Source HGNC Symbol Acc HGNC 6180 |
| E06 | SBH0491214 | ENST00000542639.5 | MAOA | ENSG00000189221 | monoamine oxidase A Source HGNC Symbol Acc HGNC 6833 |
| E07 | SBH0081757 | ENST00000487544.1 | MAOB | ENSG00000069535 | monoamine oxidase B Source HGNC Symbol Acc HGNC 6834 |
| E08 | SBH1220192 | ENST00000544786.1 | MAPK1 | ENSG00000100030 | mitogen-activated protein kinase 1 Source HGNC Symbol Acc HGNC 6871 |
| E09 | SBH0110115 | ENST00000550763.1 | NR4A1 | ENSG00000123358 | nuclear receptor subfamily 4 group A member 1 Source HGNC Symbol Acc HGNC 7980 |
| E10 | SBH0467547 | ENST00000395097.7 | NR4A3 | ENSG00000119508 | nuclear receptor subfamily 4 group A member 3 Source HGNC Symbol Acc HGNC 7982 |
| E11 | SBH0470855 | ENST00000649273.1 | PDE10A | ENSG00000112541 | phosphodiesterase 10A Source HGNC Symbol Acc HGNC 8772 |
| E12 | SBH0425925 | ENST00000440014.6 | PDE4A | ENSG00000065989 | phosphodiesterase 4A Source NCBI gene Acc 5141 |
| F01 | SBH0638095 | ENST00000371045.9 | PDE4B | ENSG00000184588 | phosphodiesterase 4B Source HGNC Symbol Acc HGNC 8781 |
| F02 | SBH0636653 | ENST00000355502.7 | AC008397.2 | ENSG00000285188 | novel protein |
| F03 | SBH0207204 | ENST00000503258.5 | PDE4D | ENSG00000113448 | phosphodiesterase 4D Source HGNC Symbol Acc HGNC 8783 |
| F04 | SBH0477068 | ENST00000650824.1 | PDYN | ENSG00000101327 | prodynorphin Source HGNC Symbol Acc HGNC 8820 |
| F05 | SBH0121428 | ENST00000462255.1 | PIK3CA | ENSG00000121879 | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha Source HGNC Symbol Acc HGNC 8975 |
| F06 | SBH1220313 | ENST00000496166.6 | PIK3CG | ENSG00000105851 | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma Source HGNC Symbol Acc HGNC 8978 |
| F07 | SBH0356964 | ENST00000489871.5 | PLA2G5 | ENSG00000127472 | phospholipase A2 group V Source HGNC Symbol Acc HGNC 9038 |
| F08 | SBH0605735 | ENST00000635830.1 | PLCB1 | ENSG00000182621 | phospholipase C beta 1 Source HGNC Symbol Acc HGNC 15917 |
| F09 | SBH0524928 | ENST00000559634.1 | PLCB2 | ENSG00000137841 | phospholipase C beta 2 Source HGNC Symbol Acc HGNC 9055 |
| F10 | SBH0059111 | ENST00000540288.5 | PLCB3 | ENSG00000149782 | phospholipase C beta 3 Source HGNC Symbol Acc HGNC 9056 |
| | | | | | |

| Position | Assay | Name | Symbol | Ensembl ID | Description |
|---|---|---|---|---|---|
| F11 | SBH0307139 | ENST00000394267.2 | PPP1R1B | ENSG00000131771 | protein phosphatase 1 regulatory inhibitor subunit 1B Source HGNC Symbol Acc HGNC 9287 |
| F12 | SBH0440536 | ENST00000308677.8 | PRKACA | ENSG00000072062 | protein kinase cAMP-activated catalytic subunit alpha Source HGNC Symbol Acc HGNC 9380 |
| G01 | SBH1220344 | ENST00000367468.10 | PTGS2 | ENSG00000073756 | prostaglandin-endoperoxide synthase 2 Source HGNC Symbol Acc HGNC 9605 |
| G02 | SBH0512586 | ENST00000519026.5 | SLC18A1 | ENSG00000036565 | solute carrier family 18 member A1 Source HGNC Symbol Acc HGNC 10934 |
| G03 | SBH0244203 | ENST00000298472.10 | SLC18A2 | ENSG00000165646 | solute carrier family 18 member A2 Source HGNC Symbol Acc HGNC 10935 |
| G04 | SBH0245655 | ENST00000512002.2 | SLC6A3 | ENSG00000142319 | solute carrier family 6 member 3 Source HGNC Symbol Acc HGNC 11049 |
| G05 | SBH0416069 | ENST00000578609.1 | SLC6A4 | ENSG00000108576 | solute carrier family 6 member 4 Source HGNC Symbol Acc HGNC 11050 |
| G06 | SBH0118819 | ENST00000394991.7 | SNCA | ENSG00000145335 | synuclein alpha Source HGNC Symbol Acc HGNC 11138 |
| G07 | SBH0202324 | ENST00000261368.13 | SNCAIP | ENSG00000064692 | synuclein alpha interacting protein Source HGNC Symbol Acc HGNC 11139 |
| G08 | SBH0332917 | ENST00000620175.4 | SYN2 | ENSG00000157152 | synapsin II Source HGNC Symbol Acc HGNC 11495 |
| G09 | SBH0386775 | ENST00000512584.5 | TDO2 | ENSG00000151790 | tryptophan 2,3-dioxygenase Source HGNC Symbol Acc HGNC 11708 |
| G10 | SBH0245945 | ENST00000412076.1 | TH | ENSG00000180176 | tyrosine hydroxylase Source HGNC Symbol Acc HGNC 11782 |
| G11 | SBH0017612 | ENST00000417164.5 | TPH1 | ENSG00000129167 | tryptophan hydroxylase 1 Source HGNC Symbol Acc HGNC 12008 |
| G12 | SBH0514467 | ENST00000333850.4 | TPH2 | ENSG00000139287 | tryptophan hydroxylase 2 Source HGNC Symbol Acc HGNC 20692 |
| 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 or can be requested from QIAGEN Technical Services or your local distributor.