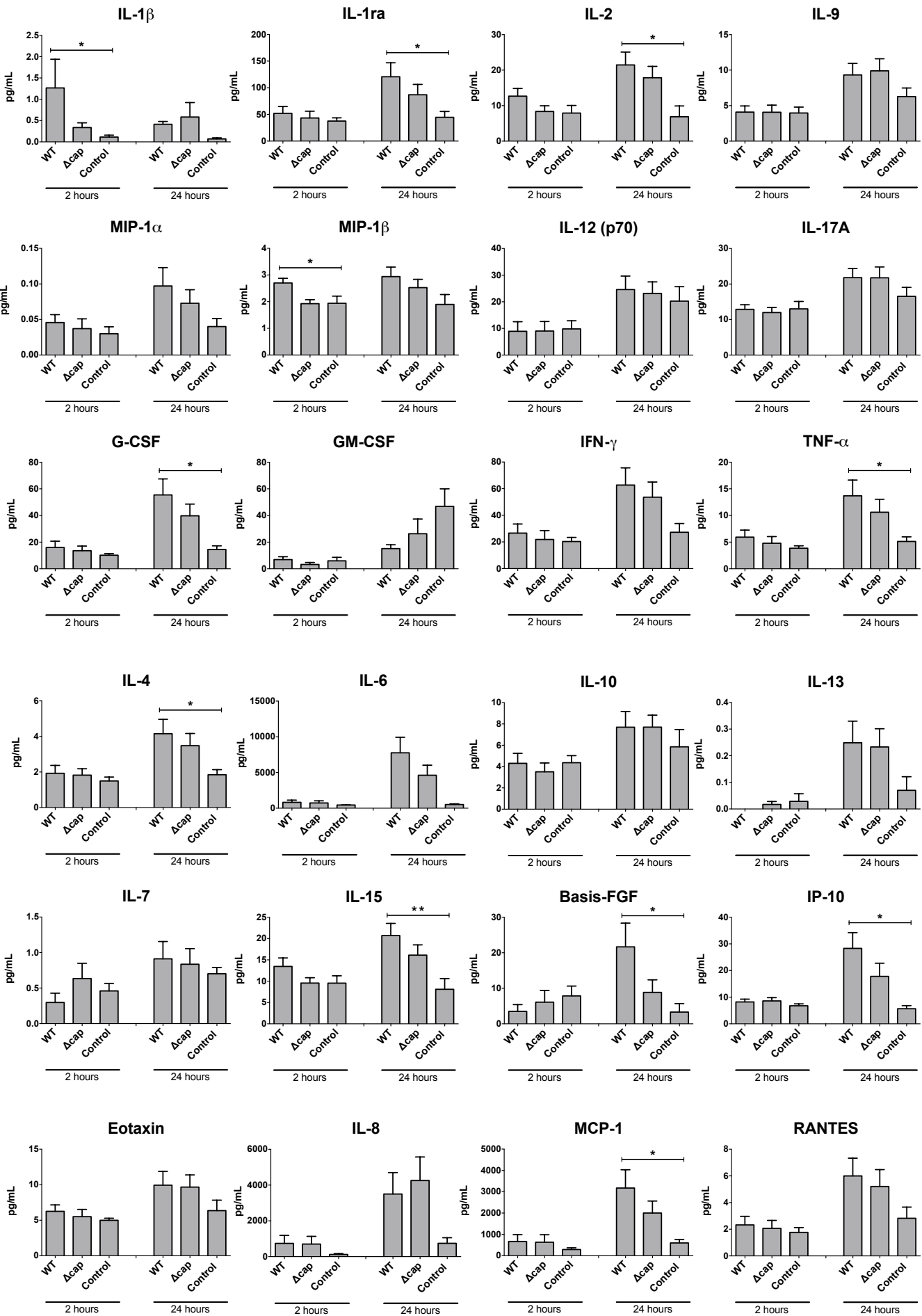


PRO-INFLAMMATORY CYTOKINES

REGULATORY/OTHER CYTOKINES

CHEMOKINES



### Supplementary Figure 1

The concentrations of several cytokines and chemokines were increased in *B. pseudomallei*-infected human OECs at 24 hours post-infection when compared to non-infected control cells. However, infection with the WT strain was not associated with significantly higher levels of any analytes tested compared to the acapsular mutant. Higher concentrations of cytokines and chemokines were detected at 24 hours post-infection when compared to 2 hours post-infection (direct statistical comparisons not shown). Data were analysed by one-way analysis of variance followed by Tukey's multiple comparison test. \* $p < 0.05$ , \*\* $p < 0.01$ . IH = inhalation; IN = intra-nasal; WT = MSHR520 wild type strain;  $\Delta$ cap = MSHR520  $\Delta$ cap strain.



## Supplementary Figure 2

Top two OEC canonical pathways underlying antimicrobial gene networks as identified using IPA and ranked using z-score. The top pathways at 24 hours post-infection are **(A)** Role of pattern recognition receptors in recognition of bacteria and viruses and **(B)** TREM1 signalling.

IPA Legend defining molecule shapes, relationship types, colors and fonts available at

<http://ingenuity.force.com/ipa/IPATutorials?id=kA250000000TN2wCAG>.

# Supplementary Table I.

Primers used in this study.

| <u>Target Genes</u> | <u>Assay ID</u> | <u>Forward Primer (5' - 3')</u> | <u>Reverse Primer (5' - 3')</u> | <u>Probe (UPL#)</u> | <u>Amplicon Size (bp)</u> |
|---------------------|-----------------|---------------------------------|---------------------------------|---------------------|---------------------------|
| ACTB                | 143636          | TCCTCCCTGGAGAAGAGCTA            | CGTGGATGCCACAGGACT              | 27                  | 127                       |
| CCL3                | 136214          | GCTGACTACTTTGAGACGAGCA          | GCTTCGCTTGGTTAGGAAGA            | 125                 | 66                        |
| CSF2                | 110860          | TCTCAGAAATGTTTGACCTCCA          | GCCCTTGAGCTTGGTGAG              | 1                   | 98                        |
| CSF3                | 140545          | ACTTTGCCACCACCATCTG             | TGGAAAGCAGAGGCCGAAG             | 48                  | 100                       |
| CXCL1               | 105522          | TCCTGCATCCCCCATAGTTA            | CTTCAGGAACAGCCACCAGT            | 52                  | 105                       |
| GAPDH               | 141139          | AGCCACATCGCTCAGACAC             | GCCCAATACGACCAAATCC             | 60                  | 66                        |
| IFNG                | 110609          | GGCATTTTGAAGAATTGGAAAG          | TTTGGATGCTCTGGTCATCTT           | 21                  | 112                       |
| IL12A               | 112242          | CACTCCCAAACCTGCTGAG             | TCTCTTCAGAAGTGCAAGGGTA          | 50                  | 88                        |
| IL12B               | 137378          | AGATGGAATTTGGTCCACTGA           | GCAGGTGAAACGTCCAGAAT            | 142                 | 103                       |
| IL1A                | 145628          | CAAAAGGCGAAGAAGACTGAC           | GGAAC TTTGGCCATCTTGAC           | 20                  | 102                       |
| IL1B                | 100950          | AGCTGATGGCCCTAAACAGA            | TCGGAGATTTCGTAGCTGGAT           | 85                  | 87                        |
| IL6                 | 144013          | ACCGGGAACGAAAGAGAAG             | GAAGGCAACTGGACCGAAG             | 133                 | 88                        |
| TNF                 | 141083          | CGGTGCTTGTTCTCCTCAGC            | GCCAGAGGGCTGATTAGAGA            | 12                  | 137                       |
| IL17A               | 147091          | CCACCTCACCTTGGAATCTC            | GGTAGTCCACGTTCCCATCA            | 117                 | 117                       |
| CCL11               | 140075          | GCCTCCAACATGAAGGTCTC            | AGGTGGTTGGGACAGAAGC             | 8                   | 103                       |
| CCL4                | 147090          | CTTCCTCGCAACTTTGTGGT            | TGCTTGCTTCTTTTGGTTTG            | 32                  | 89                        |

## *Supplementary Table I*

Primers used in this study.

## Supplementary Table II.

Human OEC transcriptional responses triggered by *B. pseudomallei* 2 h and 24 h post-infection. The lists represent (A) OECs in infection and control conditions at 2 h; (B) OECs in infection and control conditions at 24 h; (C) IPA Canonical Pathways activated by infection at 24 h; and (D) InnateDB ORA pathway data, ranked according to P value. Red and Green, up- and down-regulated, respectively.

### A. *Bp* infected versus Ctrl OECs at 2h

| <b>Genes in <i>Bp</i>-induced<br/>Transcriptional Signature<br/>in OECs at 2h (n= 24<br/>genes)</b> | <b>Fold Change (FC)<br/><i>Bp</i> infected OECs vs. Ctrl<br/>OECs at 2h</b> | <i>P</i> -value (for FC) |
|---|---|--------------------------|
| MIR137,MIR137HG,MIR268  | 5.652781113   | 5.00E-05                 |
| CCL20   | 3.430175952   | 5.00E-05                 |
| SNORA76,SNORD104  | 2.967677461   | 5.00E-05                 |
| S100A4  | 2.259031921   | 5.00E-05                 |
| CSF2  | 2.037536868   | 5.00E-05                 |
| TNFAIP3   | 1.934154286   | 5.00E-05                 |
| CXCL1   | 1.742127526   | 5.00E-05                 |
| CXCL2   | 1.731748513   | 5.00E-05                 |
| IL8   | 1.72990009  | 5.00E-05                 |
| CXCL3   | 1.579544987   | 5.00E-05                 |
| REL   | 1.573096051   | 0.00035                  |
| PTX3  | 1.452809496   | 0.00025                  |
| NFKBIA  | 1.448702006   | 5.00E-05                 |
| PTGS2   | 1.400184623   | 5.00E-05                 |
| PDE4B   | 1.379874441   | 0.00015                  |
| NR4A1   | 1.339597211   | 0.0004                   |
| IL6   | 1.325164999   | 0.0003                   |
| ANGPTL4   | 1.316247672   | 0.0004                   |
| KRT14,KRT16,KRT17   | -1.649713624  | 5.00E-05                 |
| REXO1   | -2.443106786  | 5.00E-05                 |
| SFN   | -2.497949063  | 5.00E-05                 |
| KRT13,KRT15   | -3.21776659   | 5.00E-05                 |
| KRT19   | -3.792060619  | 0.00035                  |
| HEATR6  | -31.4366563   | 5.00E-05                 |

## B. Bp infected versus Ctrl OECs at 24h

| <b>Genes in Bp-induced<br/>Transcriptional Signature<br/>in OECs at 24h (n= 378<br/>genes)</b> | <b>Fold Change (FC)<br/>Bp infected OECs vs.<br/>Ctrl OECs at 24h</b> | <i>P</i> -value (for FC) |
|--|---|--------------------------|
| RPS18  | -Infinity   | 5.00E-05                 |
| SNORD116-4   | 23.71770404   | 5.00E-05                 |
| MMP12  | 20.29615046   | 0.0002                   |
| MX1  | 17.44594595   | 5.00E-05                 |
| CXCL1  | 16.05578982   | 5.00E-05                 |
| CXCL5  | 15.7706868  | 0.0001                   |
| HEATR6   | 13.44046057   | 5.00E-05                 |
| CXCL10   | 11.20260175   | 5.00E-05                 |
| C3   | 10.44253078   | 5.00E-05                 |
| IL8  | 10.24452768   | 5.00E-05                 |
| CXCL3  | 8.387213849   | 5.00E-05                 |
| MX2  | 8.248084743   | 5.00E-05                 |
| OAS1   | 7.339406888   | 5.00E-05                 |
| IFI27  | 6.620541205   | 5.00E-05                 |
| IFI44L   | 6.576332991   | 5.00E-05                 |
| CSF2   | 6.553482677   | 5.00E-05                 |
| BST2   | 6.226941618   | 5.00E-05                 |
| IL6  | 6.215662394   | 5.00E-05                 |
| RSAD2  | 5.827188813   | 5.00E-05                 |
| IL32   | 5.329460226   | 5.00E-05                 |
| CXCL2  | 5.273468459   | 5.00E-05                 |
| MMP3   | 5.042920948   | 5.00E-05                 |
| CXCL11   | 4.984519195   | 0.0002                   |
| SERPINB2   | 4.852668213   | 5.00E-05                 |
| XAF1   | 4.803312995   | 5.00E-05                 |
| IFITM1   | 4.608580171   | 5.00E-05                 |
| TNFAIP3  | 4.536568023   | 5.00E-05                 |
| IL1B   | 4.102599922   | 5.00E-05                 |
| OAS2   | 4.081146047   | 5.00E-05                 |
| C15orf48   | 3.713966677   | 5.00E-05                 |
| MMP10  | 3.671708981   | 5.00E-05                 |
| SOD2   | 3.422624307   | 5.00E-05                 |
| CCL2   | 3.268283292   | 5.00E-05                 |
| PTX3   | 3.182244925   | 5.00E-05                 |
| BATF2  | 3.094321463   | 5.00E-05                 |
| USP18  | 3.061559881   | 5.00E-05                 |
| GBP4   | 3.015317697   | 5.00E-05                 |
| TNFRSF9  | 2.951737029   | 5.00E-05                 |
| ICAM1  | 2.932922788   | 5.00E-05                 |
| TRIM22   | 2.860187957   | 5.00E-05                 |
| TNFSF13B   | 2.853596803   | 5.00E-05                 |
| IFIT1  | 2.832952678   | 5.00E-05                 |
| IFI6   | 2.806345711   | 5.00E-05                 |
| LRRN3  | 2.771555517   | 5.00E-05                 |



|             |             |          |
|-------------|-------------|----------|
| C1S         | 2.678224798 | 5.00E-05 |
| CLDN1       | 2.631143076 | 5.00E-05 |
| EFNA1       | 2.524965592 | 5.00E-05 |
| MMP13       | 2.518036518 | 5.00E-05 |
| DCN         | 2.447508409 | 5.00E-05 |
| IFIH1       | 2.39966601  | 5.00E-05 |
| KYNU        | 2.349839953 | 5.00E-05 |
| BIRC3       | 2.342267648 | 5.00E-05 |
| TRAF1       | 2.28513357  | 5.00E-05 |
| TNC         | 2.224068045 | 5.00E-05 |
| LIF         | 2.220873451 | 5.00E-05 |
| IRAK2       | 2.192783834 | 5.00E-05 |
| ESM1        | 2.160272531 | 5.00E-05 |
| CTSS        | 2.137500656 | 5.00E-05 |
| SEMA3D      | 2.085013974 | 5.00E-05 |
| SAMD9L      | 2.084497339 | 5.00E-05 |
| INHBA       | 2.056657596 | 5.00E-05 |
| NFKBIA      | 2.028895201 | 5.00E-05 |
| IL7         | 1.983070516 | 0.00015  |
| LUM         | 1.977967197 | 5.00E-05 |
| OAS3        | 1.968067849 | 5.00E-05 |
| PLA2G4C     | 1.96003963  | 0.00055  |
| TMEM156     | 1.955715429 | 5.00E-05 |
| TNFAIP6     | 1.953751665 | 5.00E-05 |
| GBP1        | 1.945411515 | 5.00E-05 |
| IL7R        | 1.940857468 | 5.00E-05 |
| ABCA1       | 1.912508135 | 5.00E-05 |
| PARP9       | 1.91238763  | 5.00E-05 |
| SAMD9       | 1.909620513 | 5.00E-05 |
| RTP4        | 1.898370284 | 5.00E-05 |
| MEOX1       | 1.897533274 | 5.00E-05 |
| PSMB8       | 1.886750195 | 0.00065  |
| BDKRB2      | 1.850192011 | 5.00E-05 |
| GBP2        | 1.838178054 | 5.00E-05 |
| EREG        | 1.827846912 | 5.00E-05 |
| ROBO4       | 1.823272914 | 5.00E-05 |
| KLRC2,KLRC3 | 1.804227181 | 0.00095  |
| PLA2G4A     | 1.803747247 | 5.00E-05 |
| HERC6       | 1.800907495 | 5.00E-05 |
| RELB        | 1.789687182 | 5.00E-05 |
| FAM198B     | 1.7868103   | 5.00E-05 |
| IFI44       | 1.783959925 | 5.00E-05 |
| HLA-C       | 1.781028523 | 0.00075  |
| HAS2        | 1.778265433 | 5.00E-05 |
| PTGS2       | 1.776740121 | 5.00E-05 |
| CCL5        | 1.775779092 | 5.00E-05 |
| ABI3BP      | 1.761400044 | 5.00E-05 |
| ZC3H12A     | 1.754686552 | 5.00E-05 |
| ATP8B4      | 1.743969873 | 0.00015  |
| WISP1       | 1.740726345 | 5.00E-05 |

|              |             |          |
|--------------|-------------|----------|
| REL          | 1.738057063 | 0.00015  |
| ANXA10       | 1.734990321 | 5.00E-05 |
| RPPH1        | 1.733260615 | 5.00E-05 |
| TFPI2        | 1.73059503  | 5.00E-05 |
| OASL         | 1.728320162 | 5.00E-05 |
| TGM2         | 1.7250694   | 5.00E-05 |
| EPSTI1       | 1.723354449 | 5.00E-05 |
| KLHL38       | 1.720512084 | 0.0009   |
| PLSCR1       | 1.70333004  | 5.00E-05 |
| DTX3L        | 1.701119444 | 5.00E-05 |
| KCNJ15       | 1.697820046 | 0.0008   |
| WNT5A        | 1.689886506 | 5.00E-05 |
| LCP1         | 1.68537015  | 0.0001   |
| EIF3C,EIF3CL | 1.677981843 | 5.00E-05 |
| STAT1        | 1.657945824 | 5.00E-05 |
| RMRP         | 1.651062423 | 5.00E-05 |
| KIAA1107     | 1.650948469 | 0.0008   |
| DHX58        | 1.63726249  | 5.00E-05 |
| IFIT3        | 1.634384734 | 5.00E-05 |
| SAMHD1       | 1.629852941 | 5.00E-05 |
| ATP2B1       | 1.62625563  | 5.00E-05 |
| PARP14       | 1.623997942 | 0.0002   |
| ETV7         | 1.618353501 | 0.00065  |
| PID1         | 1.614418852 | 5.00E-05 |
| FGF2         | 1.612905426 | 5.00E-05 |
| DRAM1        | 1.593338982 | 5.00E-05 |
| NRP2         | 1.58742161  | 5.00E-05 |
| LAMP3        | 1.586986378 | 0.00105  |
| SULF1        | 1.581036451 | 5.00E-05 |
| PKNOX2       | 1.5799732   | 5.00E-05 |
| AKR1B1       | 1.569225559 | 5.00E-05 |
| ATP13A3      | 1.567866028 | 5.00E-05 |
| IL6ST        | 1.558000073 | 5.00E-05 |
| ELTD1        | 1.555874987 | 5.00E-05 |
| HLA-B        | 1.555343254 | 5.00E-05 |
| IRF9,RNF31   | 1.553166562 | 5.00E-05 |
| IFIT5        | 1.547834361 | 5.00E-05 |
| SP110        | 1.544436349 | 5.00E-05 |
| C1R          | 1.544292575 | 5.00E-05 |
| DDX60L       | 1.539900678 | 0.001    |
| SEMA3C       | 1.537114972 | 5.00E-05 |
| ACO1         | 1.535253197 | 5.00E-05 |
| POSTN        | 1.534049934 | 0.0001   |
| CD274        | 1.527375898 | 5.00E-05 |
| IKBKE        | 1.523834478 | 5.00E-05 |
| TRPM3        | 1.521054532 | 0.00055  |
| NEGR1        | 1.519470811 | 5.00E-05 |
| GOS2         | 1.519417139 | 0.0006   |
| SLFN5        | 1.516336838 | 0.0001   |
| KLHL5        | 1.514337055 | 5.00E-05 |

|               |             |          |
|---------------|-------------|----------|
| IFI16         | 1.510738094 | 5.00E-05 |
| SLC39A14      | 1.504905873 | 5.00E-05 |
| ANGPT1        | 1.503708339 | 0.0009   |
| EDNRA         | 1.498672406 | 5.00E-05 |
| HIPK2         | 1.498230021 | 5.00E-05 |
| NPR3          | 1.49806135  | 5.00E-05 |
| KLF9          | 1.496789512 | 5.00E-05 |
| FTH1          | 1.495263332 | 5.00E-05 |
| SIRPB1        | 1.493269689 | 0.0004   |
| KCNJ2         | 1.491235529 | 5.00E-05 |
| SLC4A7        | 1.486697736 | 5.00E-05 |
| AMPD3         | 1.486494848 | 5.00E-05 |
| IKZF2         | 1.486440485 | 0.00105  |
| ZC3H12C       | 1.48558371  | 5.00E-05 |
| EIF2AK2       | 1.484419902 | 0.00025  |
| DIAPH2        | 1.484243573 | 0.00015  |
| UBE2L6        | 1.477722772 | 5.00E-05 |
| PNPT1         | 1.472021475 | 5.00E-05 |
| DDX58, TOPORS | 1.471587533 | 5.00E-05 |
| LRWD1         | 1.470304154 | 5.00E-05 |
| HELZ2         | 1.470073693 | 5.00E-05 |
| HK2           | 1.469382122 | 5.00E-05 |
| F3            | 1.467390573 | 5.00E-05 |
| LACC1         | 1.464269076 | 5.00E-05 |
| RNF144B       | 1.462676516 | 5.00E-05 |
| TRPC4         | 1.462249421 | 0.00075  |
| IFIT2         | 1.460841692 | 5.00E-05 |
| ISG15         | 1.460702254 | 5.00E-05 |
| RASGRP3       | 1.460459934 | 0.0008   |
| NAMPT         | 1.458762763 | 5.00E-05 |
| OPTN          | 1.457062165 | 5.00E-05 |
| GPC6          | 1.456915761 | 0.00015  |
| SQRDL         | 1.450627246 | 5.00E-05 |
| DSE           | 1.450561483 | 5.00E-05 |
| ISG20         | 1.449320896 | 0.0005   |
| SAT1          | 1.440585632 | 5.00E-05 |
| MCTP1         | 1.440473634 | 0.00105  |
| IFI35         | 1.439455114 | 5.00E-05 |
| SRGN          | 1.438497856 | 5.00E-05 |
| PARP8         | 1.435620738 | 0.0001   |
| VEGFC         | 1.433796549 | 0.00045  |
| BCAT1         | 1.433247701 | 5.00E-05 |
| MAML2         | 1.433036825 | 0.00015  |
| GDNF          | 1.432362748 | 5.00E-05 |
| HDAC9         | 1.430864554 | 0.00045  |
| IL1R1         | 1.428678534 | 5.00E-05 |
| NFKBIZ, NXPE3 | 1.42431958  | 0.00015  |
| MAPK6         | 1.422962441 | 5.00E-05 |
| TNFAIP8       | 1.418598876 | 0.0001   |
| RNF213        | 1.414981252 | 0.00105  |

|               |             |          |
|---------------|-------------|----------|
| EDN1          | 1.414853306 | 0.00105  |
| BMPER         | 1.409403125 | 0.0007   |
| PTGFR         | 1.407959185 | 0.00015  |
| NR1D2         | 1.406995672 | 5.00E-05 |
| LPAR1         | 1.404362893 | 5.00E-05 |
| LHFPL2        | 1.403360687 | 5.00E-05 |
| STC1          | 1.401712497 | 0.00035  |
| PDE3A         | 1.400949657 | 5.00E-05 |
| GTF2I         | 1.400848804 | 0.00045  |
| GLIS3         | 1.394500859 | 0.00035  |
| KIAA1644      | 1.392630443 | 0.0001   |
| FAM126A       | 1.392589303 | 5.00E-05 |
| APOL6         | 1.39199648  | 5.00E-05 |
| ITGAV         | 1.390890518 | 0.00025  |
| TFPI          | 1.390704624 | 5.00E-05 |
| TNFAIP2       | 1.388464563 | 0.00025  |
| SP100         | 1.387865248 | 0.0005   |
| CYP1B1        | 1.384234482 | 0.00015  |
| NAB1          | 1.384155928 | 0.0003   |
| ETS1          | 1.380814872 | 5.00E-05 |
| ASPH          | 1.38017299  | 0.00025  |
| HECW2         | 1.37924765  | 0.00085  |
| HLA-B         | 1.378110978 | 0.0007   |
| SEC22B        | 1.375545713 | 0.0003   |
| MYOCD         | 1.372065295 | 0.0005   |
| FER           | 1.371371454 | 0.00035  |
| DNAJB14       | 1.370170103 | 0.0006   |
| CEP170        | 1.366905132 | 5.00E-05 |
| ADAMTS1       | 1.366747253 | 5.00E-05 |
| SEMA5A        | 1.36655313  | 0.00095  |
| SLIT2         | 1.364530521 | 0.0005   |
| NEDD4         | 1.364375102 | 0.00025  |
| PIK3CA        | 1.363146159 | 0.00085  |
| RNF138        | 1.360689077 | 0.0005   |
| RIPK2         | 1.36032989  | 0.0003   |
| PRKAA1        | 1.359172957 | 0.0003   |
| HLA-B         | 1.358055708 | 0.00055  |
| CDK6          | 1.357966827 | 0.00055  |
| ELOVL2        | 1.357404885 | 0.001    |
| TGFBR1        | 1.35255569  | 0.00015  |
| ARHGAP31      | 1.350096793 | 0.00045  |
| PPFIBP1,REP15 | 1.348624427 | 0.00045  |
| IL11          | 1.347950774 | 0.0001   |
| TMEM171       | 1.347501832 | 0.00085  |
| CD82          | 1.346875618 | 0.0006   |
| MTR           | 1.345124917 | 0.0007   |
| ARRDC3        | 1.344808784 | 0.00105  |
| KRAS          | 1.343986261 | 0.00035  |
| NOTCH2        | 1.343789848 | 0.00055  |
| ADAM9         | 1.340150675 | 0.00025  |

|          |              |         |
|----------|--------------|---------|
| RICTOR   | 1.338991368  | 0.00045 |
| AOX1     | 1.338660969  | 0.00035 |
| UEVLD    | 1.336727604  | 0.0009  |
| ADAM12   | 1.335532349  | 0.0006  |
| OTUD4    | 1.333136238  | 0.0005  |
| TRIM25   | 1.332736913  | 0.0003  |
| TRANK1   | 1.330423398  | 0.00075 |
| NEDD1    | 1.330422739  | 0.00085 |
| PDE4D    | 1.329070906  | 0.0006  |
| TRIM21   | 1.325982863  | 0.00075 |
| UQCRB    | 1.324990812  | 0.00065 |
| P4HA1    | 1.324125775  | 0.00035 |
| SOCS5    | 1.322009586  | 0.0009  |
| UBASH3B  | 1.321909573  | 0.00045 |
| PKN2     | 1.320472695  | 0.00085 |
| LNPEP    | 1.319631566  | 0.0012  |
| SERPINB8 | 1.318971305  | 0.0007  |
| PPAP2B   | 1.317827701  | 0.00085 |
| UGCG     | 1.317624209  | 0.001   |
| TOP2B    | 1.317514419  | 0.0007  |
| ABCE1    | 1.316416922  | 0.00105 |
| TNPO1    | 1.315836355  | 0.00045 |
| LAMC1    | 1.315255554  | 0.0004  |
| AHCTF1   | 1.31443717   | 0.00115 |
| CPSF2    | 1.309252384  | 0.0012  |
| PICALM   | 1.307136754  | 0.0012  |
| FNDC3B   | 1.306392926  | 0.0011  |
| LMAN1    | 1.306056865  | 0.00065 |
| QKI      | 1.303862868  | 0.00125 |
| SCARB2   | 1.299053134  | 0.0008  |
| DDX21    | 1.297664535  | 0.00125 |
| PDCD5    | 1.293538847  | 0.001   |
| BICC1    | 1.292883655  | 0.0011  |
| SLC9A3R1 | -1.286936962 | 0.0012  |
| NPDC1    | -1.306589877 | 0.00115 |
| IER5L    | -1.307960658 | 0.00035 |
| THEM6    | -1.31495834  | 0.0007  |
| SOLH     | -1.315195802 | 0.00105 |
| EVA1B    | -1.317711115 | 0.0011  |
| CCNL2    | -1.318476351 | 0.00095 |
| H2AFX    | -1.319890399 | 0.0008  |
| SLC6A9   | -1.329154936 | 0.0009  |
| TINAGL1  | -1.336918785 | 0.00055 |
| RAMP1    | -1.341004359 | 0.00105 |
| SMCR7    | -1.341711647 | 0.00085 |
| MFAP2    | -1.342634601 | 0.0011  |
| MVD      | -1.348848901 | 0.0004  |
| RTN4R    | -1.349209257 | 0.00115 |
| RBP4     | -1.349466571 | 0.00055 |
| GIGYF1   | -1.352334406 | 0.0004  |

|          |              |          |
|----------|--------------|----------|
| ARHGAP33 | -1.354233508 | 0.00105  |
| HIC1     | -1.35687479  | 0.00085  |
| C17orf59 | -1.357599263 | 0.00055  |
| CACFD1   | -1.36205543  | 0.00045  |
| DDX12P   | -1.362576964 | 0.00095  |
| NPTX2    | -1.362767787 | 0.00025  |
| PIF1     | -1.364144518 | 0.00075  |
| ABCA7    | -1.366830931 | 0.00025  |
| SCARF2   | -1.368243302 | 0.00055  |
| EPHB3    | -1.36849374  | 0.0006   |
| SLC6A8   | -1.37355833  | 5.00E-05 |
| ASNS     | -1.37450164  | 0.00025  |
| PCSK9    | -1.379298342 | 0.0002   |
| PHGDH    | -1.382052476 | 5.00E-05 |
| TRIB3    | -1.382934751 | 0.0002   |
| SLC9A3R2 | -1.39466246  | 0.0002   |
| JUP      | -1.401194458 | 5.00E-05 |
| CDKN1C   | -1.406537012 | 0.0005   |
| ACAP3    | -1.410770388 | 5.00E-05 |
| PADI4    | -1.414830492 | 0.00015  |
| GDF15    | -1.41523432  | 0.0012   |
| PHLDA3   | -1.429539123 | 5.00E-05 |
| SH2B2    | -1.430411349 | 0.00015  |
| FIBCD1   | -1.430714355 | 5.00E-05 |
| FAM222A  | -1.437194046 | 0.0001   |
| TMEM40   | -1.441690612 | 0.001    |
| IGFN1    | -1.442259324 | 0.00095  |
| TNK2     | -1.443159556 | 0.0007   |
| DBP      | -1.447382234 | 0.00065  |
| SESN2    | -1.457146647 | 5.00E-05 |
| FDXR     | -1.457953824 | 0.0012   |
| GPRC5C   | -1.461788184 | 5.00E-05 |
| KCNQ2    | -1.473800703 | 0.0003   |
| APOE     | -1.479215805 | 0.00035  |
| TSC22D3  | -1.482623051 | 5.00E-05 |
| ITGB4    | -1.500901028 | 5.00E-05 |
| CYS1     | -1.505443606 | 0.00055  |
| VIPR1    | -1.507523434 | 0.00015  |
| HDAC10   | -1.509504801 | 0.00015  |
| PLEKHH3  | -1.514302768 | 5.00E-05 |
| GOLGA8B  | -1.514523165 | 5.00E-05 |
| ADRA2C   | -1.516722316 | 0.00015  |
| INHBB    | -1.520265703 | 5.00E-05 |
| EPS8L2   | -1.522438321 | 0.0009   |
| ISYNA1   | -1.522738183 | 0.0001   |
| RASGRP2  | -1.526536313 | 0.00015  |
| WNT9A    | -1.530185417 | 0.0007   |
| ADCY5    | -1.5333824   | 5.00E-05 |
| HES6     | -1.533466971 | 5.00E-05 |
| IL17RE   | -1.536004079 | 0.0004   |

|                   |              |          |
|-------------------|--------------|----------|
| ZGLP1             | -1.561488998 | 0.00035  |
| TSSK6             | -1.561504372 | 0.00075  |
| KCNK15            | -1.567535728 | 0.0004   |
| SLC18A3           | -1.581551697 | 0.0007   |
| TSPAN10           | -1.585258526 | 0.0002   |
| LINC00324         | -1.585775505 | 0.00035  |
| HAP1              | -1.586688418 | 0.00025  |
| ADM2              | -1.595866487 | 0.00015  |
| ARC               | -1.612568493 | 0.00045  |
| SEC31B            | -1.615127166 | 5.00E-05 |
| HSD11B2           | -1.624954536 | 0.00015  |
| MROH6             | -1.675010512 | 5.00E-05 |
| CHRD              | -1.681640425 | 0.00045  |
| NUPR1             | -1.717948262 | 5.00E-05 |
| NGFR              | -1.73273877  | 0.0001   |
| INHBE             | -1.733571935 | 0.00075  |
| KRT14,KRT16,KRT17 | -1.736221702 | 5.00E-05 |
| ADAM33            | -1.762341221 | 5.00E-05 |
| CHAC1             | -1.828254848 | 5.00E-05 |
| SCNN1D            | -1.841324016 | 5.00E-05 |
| LPAR5             | -1.868746198 | 5.00E-05 |
| PRRG2             | -1.967163529 | 0.0011   |
| GRM4              | -2.107222843 | 5.00E-05 |
| REXO1             | -2.247529463 | 5.00E-05 |
| RHBDL1            | -2.351888992 | 0.00095  |
| CPSF1             | -2.449056883 | 5.00E-05 |
| CRYAB             | -3.066037064 | 0.0003   |
| SCRIB             | -4.120263072 | 5.00E-05 |
| TNNC1             | -4.970938804 | 5.00E-05 |
| TNNI3             | -5.136855034 | 5.00E-05 |
| MYL3              | -7.049604028 | 0.0001   |
| SNORA76,SNORD104  | -14.07978218 | 5.00E-05 |
| ACTC1             | -17.93718055 | 5.00E-05 |
| MIR1204,PVT1      | -60.4901186  | 5.00E-05 |

## C. IPA Canonical Pathways for Bp infected versus Ctrl OECs at 24h

| Ingenuity Canonical Pathways  | -log (p-value) | Ratio    | z-score |
|---|----------------|----------|---------|
| Agranulocyte Adhesion and Diapedesis  | 2.25E01        | 1.11E-01 |         |
| Granulocyte Adhesion and Diapedesis   | 1.86E01        | 1.02E-01 |         |
| Role of IL-17F in Allergic Inflammatory Airway Diseases   | 1.23E01        | 2.05E-01 |         |
| Role of IL-17A in Arthritis   | 1.14E01        | 1.67E-01 |         |
| Role of Macrophages, Fibroblasts and Endothelial Cells in Rheumatoid Arthritis                        | 9.89E00        | 4.7E-02  |         |
| Hepatic Fibrosis / Hepatic Stellate Cell Activation   | 9.82E00        | 6.09E-02 |         |
| Differential Regulation of Cytokine Production in Macrophages and T Helper Cells by IL-17A and IL-17F | 9.77E00        | 3.33E-01 |         |
| Role of Pattern Recognition Receptors in Recognition of Bacteria and Viruses                          | 9.34E00        | 7.87E-02 | 2.000   |
| IL-17 Signaling   | 8.76E00        | 1.11E-01 |         |
| Role of IL-17A in Psoriasis   | 8.58E00        | 3.85E-01 |         |
| TREM1 Signaling   | 7.19E00        | 9.33E-02 | 2.646   |
| Differential Regulation of Cytokine Production in Intestinal Epithelial Cells by IL-17A and IL-17F    | 7.18E00        | 2.17E-01 |         |
| IL-17A Signaling in Gastric Cells   | 6.98E00        | 2E-01    |         |
| Atherosclerosis Signaling   | 6.91E00        | 6.5E-02  |         |
| Role of Cytokines in Mediating Communication between Immune Cells                                     | 6.59E00        | 1.07E-01 |         |
| IL-17A Signaling in Airway Cells  | 6.24E00        | 9.38E-02 |         |
| IL-17A Signaling in Fibroblasts   | 6.21E00        | 1.43E-01 |         |
| Inhibition of Matrix Metalloproteases   | 5.97E00        | 1.28E-01 |         |
| HMGB1 Signaling   | 5.79E00        | 5.83E-02 | 2.646   |
| Role of Hypercytokinemia/hyperchemokinememia in the Pathogenesis of Influenza                         | 5.65E00        | 1.11E-01 |         |
| Bladder Cancer Signaling  | 5.45E00        | 6.9E-02  |         |
| Glucocorticoid Receptor Signaling   | 5.39E00        | 3.45E-02 |         |
| Hematopoiesis from Pluripotent Stem Cells   | 5.38E00        | 9.8E-02  |         |
| Leukocyte Extravasation Signaling   | 5.35E00        | 4.04E-02 | 1.890   |
| Communication between Innate and Adaptive Immune Cells  | 5.34E00        | 6.59E-02 |         |
| Airway Pathology in Chronic Obstructive Pulmonary Disease   | 5.25E00        | 3.75E-01 |         |
| Role of Osteoblasts, Osteoclasts and Chondrocytes in Rheumatoid Arthritis                             | 5.03E00        | 3.65E-02 |         |
| TNFR2 Signaling   | 4.99E00        | 1.38E-01 |         |
| Hepatic Cholestasis   | 4.93E00        | 4.32E-02 |         |
| Role of Tissue Factor in Cancer   | 4.86E00        | 5.45E-02 |         |
| Acute Phase Response Signaling  | 4.81E00        | 4.14E-02 | 2.236   |



|  |         |          |        |
|--|---------|----------|--------|
| Interferon Signaling   | 4.71E00 | 1.18E-01 | 2.000  |
| Calcium Signaling  | 4.66E00 | 3.93E-02 |        |
| Toll-like Receptor Signaling                                 | 4.58E00 | 6.76E-02 | 1.000  |
| HIF1 $\alpha$ Signaling                                      | 3.91E00 | 4.9E-02  |        |
| Tight Junction Signaling                                     | 3.85E00 | 3.59E-02 |        |
| Dendritic Cell Maturation                                    | 3.68E00 | 3.35E-02 |        |
| CD40 Signaling   | 3.59E00 | 6.15E-02 |        |
| 4-1BB Signaling in T Lymphocytes                             | 3.38E00 | 9.68E-02 |        |
| Oncostatin M Signaling                                       | 3.26E00 | 8.82E-02 |        |
| TWEAK Signaling  | 3.26E00 | 8.82E-02 |        |
| Pathogenesis of Multiple Sclerosis                           | 3.11E00 | 2.22E-01 |        |
| Altered T Cell and B Cell Signaling in Rheumatoid Arthritis  | 3.09E00 | 4.55E-02 |        |
| B Cell Activating Factor Signaling                           | 3.05E00 | 7.5E-02  |        |
| Colorectal Cancer Metastasis Signaling                       | 3.05E00 | 2.54E-02 | 2.449  |
| Hematopoiesis from Multipotent Stem Cells                    | 2.85E00 | 1.67E-01 |        |
| TNFR1 Signaling  | 2.79E00 | 6.12E-02 |        |
| Lymphotoxin $\beta$ Receptor Signaling                       | 2.67E00 | 5.56E-02 |        |
| IL-6 Signaling   | 2.65E00 | 3.45E-02 | 2.000  |
| LXR/RXR Activation   | 2.58E00 | 3.31E-02 | -1.000 |
| Induction of Apoptosis by HIV1                               | 2.54E00 | 5E-02    |        |
| Cellular Effects of Sildenafil (Viagra)                      | 2.48E00 | 3.1E-02  |        |
| Activation of IRF by Cytosolic Pattern Recognition Receptors | 2.46E00 | 4.69E-02 |        |
| IL-15 Signaling  | 2.42E00 | 4.55E-02 |        |
| IL-10 Signaling  | 2.39E00 | 4.41E-02 |        |
| Epithelial Adherens Junction Signaling                       | 2.29E00 | 2.74E-02 |        |
| Crosstalk between Dendritic Cells and Natural Killer Cells   | 2.06E00 | 3.37E-02 |        |
| NF- $\kappa$ B Signaling                                     | 2.04E00 | 2.31E-02 | 0.000  |
| Death Receptor Signaling                                     | 2.02E00 | 3.26E-02 |        |
| IL-8 Signaling   | 1.95E00 | 2.19E-02 | 2.000  |
| ILK Signaling  | 1.93E00 | 2.15E-02 | -2.000 |
| Complement System  | 1.88E00 | 5.41E-02 |        |
| April Mediated Signaling                                     | 1.86E00 | 5.26E-02 |        |
| Thyroid Cancer Signaling                                     | 1.81E00 | 5E-02    |        |
| Axonal Guidance Signaling                                    | 1.77E00 | 1.39E-02 |        |

|   |          |          |
|---|----------|----------|
| iNOS Signaling  | 1.74E00  | 4.55E-02 |
| Role of RIG1-like Receptors in Antiviral Innate Immunity                | 1.72E00  | 4.44E-02 |
| Actin Cytoskeleton Signaling  | 1.71E00  | 1.84E-02 |
| MSP-RON Signaling Pathway   | 1.7E00   | 4.35E-02 |
| Systemic Lupus Erythematosus Signaling                                  | 1.69E00  | 1.82E-02 |
| Graft-versus-Host Disease Signaling                                     | 1.66E00  | 4.17E-02 |
| Tetrahydrofolate Salvage from 5,10-methenyltetrahydrofolate             | 1.63E00  | 2E-01    |
| Superoxide Radicals Degradation   | 1.55E00  | 1.67E-01 |
| Protein Ubiquitination Pathway  | 1.48E00  | 1.57E-02 |
| Histidine Degradation III   | 1.43E00  | 1.25E-01 |
| Tryptophan Degradation to 2-amino-3-carboxymuconate Semialdehyde        | 1.43E00  | 1.25E-01 |
| Role of MAPK Signaling in the Pathogenesis of Influenza                 | 1.39E00  | 2.94E-02 |
| Folate Transformations I  | 1.38E00  | 1.11E-01 |
| Small Cell Lung Cancer Signaling  | 1.35E00  | 2.82E-02 |
| PEDF Signaling  | 1.35E00  | 2.82E-02 |
| VDR/RXR Activation  | 1.28E00  | 2.56E-02 |
| PPAR $\alpha$ /RXR $\alpha$ Activation                                  | 1.28E00  | 1.68E-02 |
| Cleavage and Polyadenylation of Pre-mRNA                                | 1.26E00  | 8.33E-02 |
| RANK Signaling in Osteoclasts   | 1.19E00  | 2.27E-02 |
| Apoptosis Signaling   | 1.18E00  | 2.25E-02 |
| NAD biosynthesis II (from tryptophan)                                   | 1.16E00  | 6.67E-02 |
| Regulation of Actin-based Motility by Rho                               | 1.16E00  | 2.2E-02  |
| IL-1 Signaling  | 1.16E00  | 2.2E-02  |
| Fc $\gamma$ Receptor-mediated Phagocytosis in Macrophages and Monocytes | 1.14E00  | 2.15E-02 |
| PPAR Signaling  | 1.14E00  | 2.13E-02 |
| Antioxidant Action of Vitamin C   | 1.11E00  | 2.06E-02 |
| Cardiomyocyte Differentiation via BMP Receptors                         | 1.04E00  | 5E-02    |
| Tryptophan Degradation III (Eukaryotic)                                 | 1.04E00  | 5E-02    |
| Type I Diabetes Mellitus Signaling                                      | 1.02E00  | 1.82E-02 |
| G $\alpha$ 12/13 Signaling  | 9.75E-01 | 1.71E-02 |
| p38 MAPK Signaling  | 9.75E-01 | 1.71E-02 |
| Tumoricidal Function of Hepatic Natural Killer Cells                    | 9.68E-01 | 4.17E-02 |
| Role of Lipids/Lipid Rafts in the Pathogenesis of Influenza             | 9.52E-01 | 4E-02    |
| Role of JAK family kinases in IL-6-type Cytokine Signaling              | 9.52E-01 | 4E-02    |

|   |          |          |
|---|----------|----------|
| RhoA Signaling  | 9.45E-01 | 1.64E-02 |
| IL-15 Production  | 9.2E-01  | 3.7E-02  |
| FXR/RXR Activation  | 9.16E-01 | 1.57E-02 |
| PI3K Signaling in B Lymphocytes                             | 9.11E-01 | 1.56E-02 |
| Aryl Hydrocarbon Receptor Signaling                         | 8.48E-01 | 1.43E-02 |
| MIF-mediated Glucocorticoid Regulation                      | 8.39E-01 | 3.03E-02 |
| Aldosterone Signaling in Epithelial Cells                   | 7.91E-01 | 1.32E-02 |
| Docosahexaenoic Acid (DHA) Signaling                        | 7.72E-01 | 2.56E-02 |
| Role of PKR in Interferon Induction and Antiviral Response  | 7.62E-01 | 2.5E-02  |
| MIF Regulation of Innate Immunity                           | 7.53E-01 | 2.44E-02 |
| Mechanisms of Viral Exit from Host Cells                    | 7.53E-01 | 2.44E-02 |
| RhoGDI Signaling  | 7.05E-01 | 1.16E-02 |
| RAR Activation  | 6.94E-01 | 1.14E-02 |
| Ephrin A Signaling  | 6.91E-01 | 2.08E-02 |
| Sertoli Cell-Sertoli Cell Junction Signaling                | 6.87E-01 | 1.12E-02 |
| Role of NFAT in Cardiac Hypertrophy                         | 6.83E-01 | 1.12E-02 |
| NRF2-mediated Oxidative Stress Response                     | 6.79E-01 | 1.11E-02 |
| CD27 Signaling in Lymphocytes                               | 6.6E-01  | 1.92E-02 |
| Glutamate Receptor Signaling                                | 6.25E-01 | 1.75E-02 |
| ATM Signaling   | 6.12E-01 | 1.69E-02 |
| GM-CSF Signaling  | 5.94E-01 | 1.61E-02 |
| ERK5 Signaling  | 5.88E-01 | 1.59E-02 |
| Retinoic acid Mediated Apoptosis Signaling                  | 5.82E-01 | 1.56E-02 |
| Hypoxia Signaling in the Cardiovascular System              | 5.76E-01 | 1.54E-02 |
| Angiopietin Signaling                                       | 5.7E-01  | 1.52E-02 |
| Role of PI3K/AKT Signaling in the Pathogenesis of Influenza | 5.7E-01  | 1.52E-02 |
| PXR/RXR Activation  | 5.65E-01 | 1.49E-02 |
| Erythropoietin Signaling                                    | 5.65E-01 | 1.49E-02 |
| Protein Kinase A Signaling                                  | 5.6E-01  | 7.77E-03 |
| Remodeling of Epithelial Adherens Junctions                 | 5.59E-01 | 1.47E-02 |
| Agrin Interactions at Neuromuscular Junction                | 5.54E-01 | 1.45E-02 |
| Cardiac Hypertrophy Signaling                               | 5.46E-01 | 8.97E-03 |
| T Helper Cell Differentiation                               | 5.43E-01 | 1.41E-02 |
| Chemokine Signaling   | 5.43E-01 | 1.41E-02 |

|  |          |          |
|--|----------|----------|
| Caveolar-mediated Endocytosis Signaling                              | 5.38E-01 | 1.39E-02 |
| JAK/Stat Signaling   | 5.38E-01 | 1.39E-02 |
| LPS-stimulated MAPK Signaling  | 5.33E-01 | 1.37E-02 |
| NF-κB Activation by Viruses  | 5.33E-01 | 1.37E-02 |
| Signaling by Rho Family GTPases                                      | 5.18E-01 | 8.55E-03 |
| Regulation of IL-2 Expression in Activated and Anergic T Lymphocytes | 5.05E-01 | 1.27E-02 |
| Prostate Cancer Signaling  | 4.91E-01 | 1.22E-02 |
| HIPPO signaling  | 4.75E-01 | 1.16E-02 |
| FAK Signaling  | 4.71E-01 | 1.15E-02 |
| TGF-β Signaling  | 4.71E-01 | 1.15E-02 |
| Neuregulin Signaling   | 4.67E-01 | 1.14E-02 |
| G-Protein Coupled Receptor Signaling                                 | 4.66E-01 | 7.81E-03 |
| Virus Entry via Endocytic Pathways                                   | 4.63E-01 | 1.12E-02 |
| PAK Signaling  | 4.63E-01 | 1.12E-02 |
| OX40 Signaling Pathway   | 4.63E-01 | 1.12E-02 |
| VEGF Signaling   | 4.55E-01 | 1.1E-02  |
| Factors Promoting Cardiogenesis in Vertebrates                       | 4.51E-01 | 1.09E-02 |
| Mouse Embryonic Stem Cell Pluripotency                               | 4.4E-01  | 1.05E-02 |
| Xenobiotic Metabolism Signaling                                      | 4.35E-01 | 7.38E-03 |
| T Cell Receptor Signaling  | 4.33E-01 | 1.03E-02 |
| Amyotrophic Lateral Sclerosis Signaling                              | 4.29E-01 | 1.02E-02 |
| Neuropathic Pain Signaling In Dorsal Horn Neurons                    | 4.22E-01 | 1E-02    |
| Cholecystokinin/Gastrin-mediated Signaling                           | 4.19E-01 | 9.9E-03  |
| Paxillin Signaling   | 4.16E-01 | 9.8E-03  |
| HGF Signaling  | 4.06E-01 | 9.52E-03 |
| fMLP Signaling in Neutrophils  | 3.96E-01 | 9.26E-03 |
| iCOS-iCOSL Signaling in T Helper Cells                               | 3.96E-01 | 9.26E-03 |
| Fc Epsilon RI Signaling  | 3.93E-01 | 9.17E-03 |
| Renin-Angiotensin Signaling  | 3.93E-01 | 9.17E-03 |
| Role of NANOG in Mammalian Embryonic Stem Cell Pluripotency          | 3.87E-01 | 9.01E-03 |
| Type II Diabetes Mellitus Signaling                                  | 3.7E-01  | 8.55E-03 |
| CD28 Signaling in T Helper Cells                                     | 3.67E-01 | 8.47E-03 |
| PKCθ Signaling in T Lymphocytes                                      | 3.67E-01 | 8.47E-03 |
| Synaptic Long Term Potentiation                                      | 3.65E-01 | 8.4E-03  |

|   |          |          |
|---|----------|----------|
| Gαi Signaling   | 3.62E-01 | 8.33E-03 |
| PI3K/AKT Signaling  | 3.54E-01 | 8.13E-03 |
| Human Embryonic Stem Cell Pluripotency                                | 3.27E-01 | 7.46E-03 |
| Relaxin Signaling   | 3.24E-01 | 7.41E-03 |
| Synaptic Long Term Depression   | 3.11E-01 | 7.09E-03 |
| Regulation of eIF4 and p70S6K Signaling                               | 3E-01    | 6.85E-03 |
| Gαq Signaling   | 2.98E-01 | 6.8E-03  |
| CXCR4 Signaling   | 2.88E-01 | 6.58E-03 |
| Molecular Mechanisms of Cancer  | 2.86E-01 | 5.48E-03 |
| Gap Junction Signaling  | 2.83E-01 | 6.45E-03 |
| Tec Kinase Signaling  | 2.77E-01 | 6.33E-03 |
| Germ Cell-Sertoli Cell Junction Signaling                             | 2.73E-01 | 6.25E-03 |
| Cdc42 Signaling   | 2.61E-01 | 5.99E-03 |
| Mitochondrial Dysfunction   | 2.54E-01 | 5.85E-03 |
| Role of NFAT in Regulation of the Immune Response                     | 2.54E-01 | 5.85E-03 |
| CREB Signaling in Neurons   | 2.54E-01 | 5.85E-03 |
| Ephrin Receptor Signaling   | 2.49E-01 | 5.75E-03 |
| B Cell Receptor Signaling   | 2.46E-01 | 5.68E-03 |
| Production of Nitric Oxide and Reactive Oxygen Species in Macrophages | 2.4E-01  | 5.56E-03 |
| Clathrin-mediated Endocytosis Signaling                               | 2.32E-01 | 5.41E-03 |
| EIF2 Signaling  | 2.32E-01 | 5.41E-03 |
| mTOR Signaling  | 2.28E-01 | 5.32E-03 |
| Thrombin Signaling  | 2.24E-01 | 5.24E-03 |
| Integrin Signaling  | 2.09E-01 | 4.95E-03 |

## D. Pathway Over-representation Analysis for Bp infected vs Ctrl OECs at 24h

| Pathway Name<br>(Red is Up-regulated, Green is Down-regulated,<br>Pathways with <i>P</i> values of <0.05 shown sorted<br>according to most significant) | Path.<br>Id | Source<br>Name | Org. | Pathway up-<br>regulated<br>genes count | Genes in<br>InnateDB | Pathway up-<br>regulated<br>value | Pathway up-<br>regulated p-<br>value<br>(corrected) | Pathway<br>down-<br>regulated<br>genes<br>count | Pathway<br>down-<br>regulated<br>p-value | Pathway<br>down-<br>regulated p-<br>value<br>(corrected) |
|---|-------------|----------------|------|---|----------------------|-----------------------------------|---|---|--|--|
| Cytokine-cytokine receptor interaction  | 515         | KEGG           | 9606 | 17                                      | 247                  | 5.16E-15                          | 1.20E-11  | 0   | 1  | 1  |
| Chemokine receptors bind chemokines   | 13243       | REACTOME       | 9606 | 9                                       | 49                   | 3.42E-12                          | 2.65E-09  | 0   | 1  | 1  |
| Cytokine Signaling in Immune system   | 17418       | REACTOME       | 9606 | 15                                      | 256                  | 2.96E-12                          | 3.44E-09  | 0   | 1  | 1  |
| NOD-like receptor signaling pathway   | 8112        | KEGG           | 9606 | 9                                       | 54                   | 8.68E-12                          | 5.03E-09  | 0   | 1  | 1  |
| Interferon alpha/beta signaling   | 13074       | REACTOME       | 9606 | 9                                       | 59                   | 2.01E-11                          | 9.33E-09  | 0   | 1  | 1  |
| Interferon Signaling  | 18059       | REACTOME       | 9606 | 11                                      | 151                  | 3.53E-10                          | 1.37E-07  | 0   | 1  | 1  |
| Striated Muscle Contraction   | 13920       | REACTOME       | 9606 | 0                                       | 33                   | 1                                 | 1   | 5   | 1.08E-10                                 | 2.51E-07   |
| Immune System   | 18444       | REACTOME       | 9606 | 22                                      | 1081                 | 9.95E-09                          | 3.30E-06  | 0   | 1  | 1  |
| Cardiac muscle contraction  | 4399        | KEGG           | 9606 | 0                                       | 73                   | 1                                 | 1   | 5   | 6.73E-09                                 | 5.21E-06   |
| Muscle contraction  | 19261       | REACTOME       | 9606 | 0                                       | 53                   | 1                                 | 1   | 5   | 1.30E-09                                 | 1.51E-06   |
| Chemokine signaling pathway   | 4389        | KEGG           | 9606 | 10                                      | 173                  | 2.31E-08                          | 6.71E-06  | 0   | 1  | 1  |
| Validated transcriptional targets of AP1 family m   | 14994       | PID NCI        | 9606 | 6                                       | 35                   | 2.74E-08                          | 7.08E-06  | 0   | 1  | 1  |
| Peptide ligand-binding receptors  | 13249       | REACTOME       | 9606 | 10                                      | 179                  | 3.21E-08                          | 7.44E-06  | 0   | 1  | 1  |
| Hypertrophic cardiomyopathy (HCM)   | 4395        | KEGG           | 9606 | 1                                       | 83                   | 0.3655193                         | 1   | 5   | 1.30E-08                                 | 7.52E-06   |
| Dilated cardiomyopathy  | 5714        | KEGG           | 9606 | 0                                       | 90                   | 1                                 | 1   | 5   | 1.95E-08                                 | 9.07E-06   |
| Malaria   | 10359       | KEGG           | 9606 | 6                                       | 46                   | 1.51E-07                          | 3.19E-05  | 0   | 1  | 1  |
| IL23-mediated signaling events  | 15427       | PID NCI        | 9606 | 5                                       | 37                   | 1.49E-06                          | 2.88E-04  | 0   | 1  | 1  |
| G alpha (i) signalling events   | 13220       | REACTOME       | 9606 | 9                                       | 223                  | 2.62E-06                          | 4.68E-04  | 1   | 0.21794                                  | 1  |
| Class A/1 (Rhodopsin-like receptors)  | 13250       | REACTOME       | 9606 | 10                                      | 296                  | 3.39E-06                          | 5.62E-04  | 0   | 1  | 1  |
| CD40/CD40L signaling  | 14909       | PID NCI        | 9606 | 4                                       | 26                   | 1.06E-05                          | 0.00164362  | 0   | 1  | 1  |
| Toll-like receptor signaling pathway  | 564         | KEGG           | 9606 | 6                                       | 98                   | 1.37E-05                          | 0.00199153  | 0   | 1  | 1  |
| Chagas disease (American trypanosomiasis)   | 10366       | KEGG           | 9606 | 6                                       | 101                  | 1.63E-05                          | 0.00222902  | 0   | 1  | 1  |
| Activation of Matrix Metalloproteinases   | 13391       | REACTOME       | 9606 | 4                                       | 32                   | 2.49E-05                          | 0.00289466  | 0   | 1  | 1  |
| Amoebiasis  | 10358       | KEGG           | 9606 | 6                                       | 107                  | 2.27E-05                          | 0.00292877  | 0   | 1  | 1  |
| Tnfr2 signaling pathway   | 4004        | PID BIOCART    | 9606 | 3                                       | 11                   | 2.43E-05                          | 0.00296442  | 0   | 1  | 1  |

|   |       |             |      |    |     |           |            |   |          |   |
|---|-------|-------------|------|----|-----|-----------|------------|---|----------|---|
| AP-1 transcription factor network                         | 15318 | PID NCI     | 9606 | 5  | 67  | 2.91E-05  | 0.00322007 | 0 | 1        | 1 |
| Signal transduction through il1r                          | 4064  | PID BIOCART | 9606 | 4  | 34  | 3.19E-05  | 0.00322029 | 0 | 1        | 1 |
| Glucocorticoid receptor regulatory network                | 15321 | PID NCI     | 9606 | 5  | 68  | 3.13E-05  | 0.00330413 | 0 | 1        | 1 |
| Degradation of the extracellular matrix                   | 17498 | REACTOME    | 9606 | 6  | 116 | 3.59E-05  | 0.00347521 | 0 | 1        | 1 |
| GPCR ligand binding                                       | 19266 | REACTOME    | 9606 | 10 | 420 | 7.10E-05  | 0.00658846 | 1 | 0.373828 | 1 |
| Hepatitis C   | 10404 | KEGG        | 9606 | 6  | 132 | 7.42E-05  | 0.00662703 | 0 | 1        | 1 |
| Extracellular matrix organization                         | 17095 | REACTOME    | 9606 | 8  | 264 | 7.87E-05  | 0.00676875 | 0 | 1        | 1 |
| Cytosolic DNA-sensing pathway                             | 8117  | KEGG        | 9606 | 4  | 58  | 2.65E-04  | 0.02198396 | 0 | 1        | 1 |
| Antiviral mechanism by IFN-stimulated genes               | 17226 | REACTOME    | 9606 | 4  | 62  | 3.43E-04  | 0.02489101 | 0 | 1        | 1 |
| ISG15 antiviral mechanism                                 | 13075 | REACTOME    | 9606 | 4  | 62  | 3.43E-04  | 0.02489101 | 0 | 1        | 1 |
| Interferon gamma signaling                                | 13077 | REACTOME    | 9606 | 4  | 62  | 3.43E-04  | 0.02489101 | 0 | 1        | 1 |
| Collagen degradation                                      | 13392 | REACTOME    | 9606 | 4  | 61  | 3.22E-04  | 0.02579683 | 0 | 1        | 1 |
| Nfkb activation by nontypeable hemophilus influenzae      | 4159  | PID BIOCART | 9606 | 3  | 28  | 4.51E-04  | 0.03174895 | 0 | 1        | 1 |
| RIG-I-like receptor signaling pathway                     | 5713  | KEGG        | 9606 | 4  | 69  | 5.17E-04  | 0.03530383 | 0 | 1        | 1 |
| JAK STAT pathway and regulation                           | 16125 | INOH        | 9606 | 7  | 267 | 5.54E-04  | 0.03676622 | 0 | 1        | 1 |
| NOD1/2 Signaling Pathway                                  | 13056 | REACTOME    | 9606 | 3  | 31  | 6.12E-04  | 0.03947658 | 0 | 1        | 1 |
| HIV-1 Nef: Negative effector of Fas and TNF-alpha         | 15863 | PID NCI     | 9606 | 3  | 33  | 7.38E-04  | 0.04626598 | 0 | 1        | 1 |
| Toll-Like Receptors Cascades                              | 17767 | REACTOME    | 9606 | 5  | 136 | 8.19E-04  | 0.04876558 | 0 | 1        | 1 |
| TNF receptor signaling pathway                            | 15154 | PID NCI     | 9606 | 3  | 34  | 8.06E-04  | 0.04921935 | 0 | 1        | 1 |
| African trypanosomiasis                                   | 10384 | KEGG        | 9606 | 3  | 35  | 8.78E-04  | 0.05094678 | 0 | 1        | 1 |
| GPCR signaling  | 16218 | INOH        | 9606 | 7  | 291 | 9.23E-04  | 0.05226469 | 1 | 0.275303 | 1 |
| Cd40l signaling pathway                                   | 4093  | PID BIOCART | 9606 | 2  | 9   | 0.0010197 | 0.05635109 | 0 | 1        | 1 |
| Apoptosis   | 485   | KEGG        | 9606 | 4  | 85  | 0.0011363 | 0.05994233 | 0 | 1        | 1 |
| Hematopoietic cell lineage                                | 415   | KEGG        | 9606 | 4  | 85  | 0.0011363 | 0.05994233 | 0 | 1        | 1 |
| MyD88-independent cascade                                 | 13030 | REACTOME    | 9606 | 4  | 94  | 0.0016511 | 0.08153795 | 0 | 1        | 1 |
| TRIF-mediated TLR3/TLR4 signaling                         | 19507 | REACTOME    | 9606 | 4  | 94  | 0.0016511 | 0.08153795 | 0 | 1        | 1 |
| Toll Like Receptor 3 (TLR3) Cascade                       | 13031 | REACTOME    | 9606 | 4  | 94  | 0.0016511 | 0.08153795 | 0 | 1        | 1 |
| Nucleotide-binding domain, leucine rich repeat containing | 18305 | REACTOME    | 9606 | 3  | 46  | 0.0019526 | 0.09248964 | 0 | 1        | 1 |
| Signaling by GPCR   | 17449 | REACTOME    | 9606 | 13 | 991 | 0.0019477 | 0.09417882 | 1 | 0.680786 | 1 |
| Innate Immune System                                      | 17476 | REACTOME    | 9606 | 9  | 534 | 0.0020844 | 0.09675847 | 0 | 1        | 1 |
| Erythropoietin mediated neuroprotection through           | 4161  | PID BIOCART | 9606 | 2  | 13  | 0.0021788 | 0.09915848 | 0 | 1        | 1 |
| Activated TLR4 signalling                                 | 19190 | REACTOME    | 9606 | 4  | 106 | 0.0025642 | 0.11021468 | 0 | 1        | 1 |

|  |       |             |      |   |     |           |            |   |   |          |   |
|--|-------|-------------|------|---|-----|-----------|------------|---|---|----------|---|
| Signaling by Interleukins                                  | 18744 | REACTOME    | 9606 | 4 | 105 | 0.0024773 | 0.11057384 | 0 | 1 | 1        |   |
| Staphylococcus aureus infection                            | 10357 | KEGG        | 9606 | 3 | 51  | 0.0026281 | 0.1109064  | 0 | 1 | 1        |   |
| Classical complement pathway                               | 3972  | PID BIOCART | 9606 | 2 | 14  | 0.0025332 | 0.11093317 | 0 | 1 | 1        |   |
| Hiv-1 nef: negative effector of fas and tnf                | 4101  | PID BIOCART | 9606 | 3 | 52  | 0.0027784 | 0.11313475 | 0 | 1 | 1        |   |
| Keratinocyte differentiation                               | 4032  | PID BIOCART | 9606 | 3 | 52  | 0.0027784 | 0.11313475 | 0 | 1 | 1        |   |
| Assembly of collagen fibrils and other multimeric          | 13386 | REACTOME    | 9606 | 3 | 54  | 0.0030947 | 0.12384027 | 0 | 1 | 1        |   |
| Toll Like Receptor 4 (TLR4) Cascade                        | 13046 | REACTOME    | 9606 | 4 | 118 | 0.0037765 | 0.14856411 | 0 | 1 | 1        |   |
| Initial triggering of complement                           | 13054 | REACTOME    | 9606 | 2 | 18  | 0.0042003 | 0.15981765 | 0 | 1 | 1        |   |
| Immunoregulatory interactions between a Lymphocyte and     | 13066 | REACTOME    | 9606 | 3 | 60  | 0.004173  | 0.16142583 | 0 | 1 | 1        |   |
| IL1  | 15917 | NETPATH     | 9606 | 3 | 66  | 0.0054543 | 0.20418604 | 0 | 1 | 1        |   |
| CXCR3-mediated signaling events                            | 15621 | PID NCI     | 9606 | 2 | 21  | 0.0057054 | 0.20691104 | 0 | 1 | 1        |   |
| Epithelial cell signaling in Helicobacter pylori infection | 457   | KEGG        | 9606 | 3 | 67  | 0.0056884 | 0.2095661  | 0 | 1 | 1        |   |
| GM-CSF-mediated signaling events                           | 15598 | PID NCI     | 9606 | 2 | 22  | 0.0062543 | 0.21994153 | 0 | 1 | 1        |   |
| Leishmaniasis  | 10355 | KEGG        | 9606 | 3 | 69  | 0.0061743 | 0.22046919 | 0 | 1 | 1        |   |
| ATF4 activates genes                                       | 13379 | REACTOME    | 9606 | 2 | 23  | 0.0068262 | 0.22961804 | 0 | 1 | 1        |   |
| Canonical NF-kappaB pathway                                | 15469 | PID NCI     | 9606 | 2 | 23  | 0.0068262 | 0.22961804 | 0 | 1 | 1        |   |
| TRAF6 mediated NF-kB activation                            | 13015 | REACTOME    | 9606 | 2 | 23  | 0.0068262 | 0.22961804 | 0 | 1 | 1        |   |
| RIG-I/MDA5 mediated induction of IFN-alpha/beta            | 13017 | REACTOME    | 9606 | 3 | 75  | 0.0077781 | 0.25789974 | 0 | 1 | 1        |   |
| Pathways in cancer   | 4397  | KEGG        | 9606 | 6 | 324 | 0.0078936 | 0.25804168 | 0 | 1 | 1        |   |
| Alpha9 beta1 integrin signaling events                     | 15241 | PID NCI     | 9606 | 2 | 25  | 0.0080385 | 0.25912886 | 0 | 1 | 1        |   |
| IL27-mediated signaling events                             | 15133 | PID NCI     | 9606 | 2 | 26  | 0.0086783 | 0.27219223 | 0 | 1 | 1        |   |
| PERK regulates gene expression                             | 13380 | REACTOME    | 9606 | 2 | 26  | 0.0086783 | 0.27219223 | 0 | 1 | 1        |   |
| Polyadenylation of mrna                                    | 4158  | PID BIOCART | 9606 | 0 | 8   |           | 1          | 1 | 1 | 0.008677 | 1 |
| Transport of Mature mRNA Derived from an Intracellular     | 13750 | REACTOME    | 9606 | 0 | 8   |           | 1          | 1 | 1 | 0.008677 | 1 |
| Transport of Mature mRNAs Derived from Intracellular       | 19048 | REACTOME    | 9606 | 0 | 9   |           | 1          | 1 | 1 | 0.009757 | 1 |
| Jak-STAT signaling pathway                                 | 568   | KEGG        | 9606 | 4 | 153 | 0.0094009 | 0.27973755 | 0 | 1 | 1        |   |
| MyD88 cascade initiated on plasma membrane                 | 13043 | REACTOME    | 9606 | 3 | 80  | 0.0092861 | 0.27990895 | 0 | 1 | 1        |   |
| Toll Like Receptor 10 (TLR10) Cascade                      | 13044 | REACTOME    | 9606 | 3 | 80  | 0.0092861 | 0.27990895 | 0 | 1 | 1        |   |
| Toll Like Receptor 5 (TLR5) Cascade                        | 13048 | REACTOME    | 9606 | 3 | 80  | 0.0092861 | 0.27990895 | 0 | 1 | 1        |   |
| TRAF6 mediated induction of NFkB and MAP kinase            | 13040 | REACTOME    | 9606 | 3 | 81  | 0.0096067 | 0.28224376 | 0 | 1 | 1        |   |
| MyD88 dependent cascade initiated on endosome              | 13041 | REACTOME    | 9606 | 3 | 83  | 0.0102674 | 0.28711523 | 0 | 1 | 1        |   |
| Toll Like Receptor 7/8 (TLR7/8) Cascade                    | 16831 | REACTOME    | 9606 | 3 | 83  | 0.0102674 | 0.28711523 | 0 | 1 | 1        |   |



|  |       |             |      |    |     |           |            |   |          |   |
|--|-------|-------------|------|----|-----|-----------|------------|---|----------|---|
| Beta2 integrin cell surface interactions         | 15182 | PID NCI     | 9606 | 2  | 28  | 0.0100239 | 0.28722791 | 0 | 1        | 1 |
| TAK1 activates NFkB by phosphorylation and act   | 13027 | REACTOME    | 9606 | 2  | 28  | 0.0100239 | 0.28722791 | 0 | 1        | 1 |
| Syndecan-2-mediated signaling events             | 14896 | PID NCI     | 9606 | 2  | 29  | 0.0107293 | 0.28956507 | 0 | 1        | 1 |
| amb2 Integrin signaling                          | 15836 | PID NCI     | 9606 | 2  | 29  | 0.0107293 | 0.28956507 | 0 | 1        | 1 |
| Collagen formation                               | 19746 | REACTOME    | 9606 | 3  | 84  | 0.0106074 | 0.29309189 | 0 | 1        | 1 |
| Import of palmitoyl-CoA into the mitochondrial r | 13521 | REACTOME    | 9606 | 0  | 11  | 1         | 1          | 1 | 0.011914 | 1 |
| Small cell lung cancer                           | 527   | KEGG        | 9606 | 3  | 86  | 0.0113069 | 0.29821935 | 0 | 1        | 1 |
| Toll Like Receptor 9 (TLR9) Cascade              | 13042 | REACTOME    | 9606 | 3  | 86  | 0.0113069 | 0.29821935 | 0 | 1        | 1 |
| Negative regulators of RIG-I/MDA5 signaling      | 13013 | REACTOME    | 9606 | 2  | 30  | 0.011456  | 0.29875633 | 0 | 1        | 1 |
| MyD88:Mal cascade initiated on plasma membra     | 13034 | REACTOME    | 9606 | 3  | 88  | 0.0120326 | 0.30689662 | 0 | 1        | 1 |
| Toll Like Receptor TLR6:TLR2 Cascade             | 13036 | REACTOME    | 9606 | 3  | 88  | 0.0120326 | 0.30689662 | 0 | 1        | 1 |
| Toll Like Receptor 2 (TLR2) Cascade              | 17710 | REACTOME    | 9606 | 3  | 91  | 0.0131705 | 0.32519854 | 0 | 1        | 1 |
| Toll Like Receptor TLR1:TLR2 Cascade             | 13035 | REACTOME    | 9606 | 3  | 91  | 0.0131705 | 0.32519854 | 0 | 1        | 1 |
| Ceramide signaling pathway                       | 4149  | PID BIOCART | 9606 | 2  | 32  | 0.0129725 | 0.32727434 | 0 | 1        | 1 |
| Processing of Intronless Pre-mRNAs               | 13664 | REACTOME    | 9606 | 0  | 13  | 1         | 1          | 1 | 0.014066 | 1 |
| TWEAK  | 15930 | NETPATH     | 9606 | 2  | 34  | 0.0145716 | 0.35600807 | 0 | 1        | 1 |
| Complement cascade                               | 19237 | REACTOME    | 9606 | 2  | 35  | 0.0154016 | 0.37236462 | 0 | 1        | 1 |
| Bladder cancer                                   | 514   | KEGG        | 9606 | 2  | 36  | 0.0162514 | 0.3848928  | 0 | 1        | 1 |
| Prion diseases                                   | 4396  | KEGG        | 9606 | 2  | 36  | 0.0162514 | 0.3848928  | 0 | 1        | 1 |
| Regulation of pyruvate dehydrogenase (PDH) co    | 13591 | REACTOME    | 9606 | 0  | 16  | 1         | 1          | 1 | 0.017287 | 1 |
| Graft-versus-host disease                        | 2807  | KEGG        | 9606 | 2  | 37  | 0.0171209 | 0.40139093 | 0 | 1        | 1 |
| IL-1 signaling pathway                           | 16110 | INOH        | 9606 | 2  | 38  | 0.0180099 | 0.41387219 | 0 | 1        | 1 |
| Urokinase-type plasminogen activator (uPA) and   | 15219 | PID NCI     | 9606 | 2  | 38  | 0.0180099 | 0.41387219 | 0 | 1        | 1 |
| GPCR downstream signaling                        | 18003 | REACTOME    | 9606 | 10 | 884 | 0.018972  | 0.43170633 | 1 | 0.636556 | 1 |
| Interleukin-1 signaling                          | 13078 | REACTOME    | 9606 | 2  | 40  | 0.0198455 | 0.44719702 | 0 | 1        | 1 |
| Antagonism of Activin by Follistatin             | 13272 | REACTOME    | 9606 | 1  | 4   | 0.021594  | 0.48191948 | 0 | 1        | 1 |
| Calcineurin-regulated NFAT-dependent transcrip   | 15231 | PID NCI     | 9606 | 2  | 44  | 0.0237401 | 0.5101926  | 0 | 1        | 1 |
| Processing of Capped Intronless Pre-mRNA         | 18842 | REACTOME    | 9606 | 0  | 22  | 1         | 1          | 1 | 0.023699 | 1 |
| Ceramide signaling pathway                       | 14925 | PID NCI     | 9606 | 2  | 44  | 0.0237401 | 0.5101926  | 0 | 1        | 1 |
| Interleukin-2 signaling                          | 13083 | REACTOME    | 9606 | 2  | 44  | 0.0237401 | 0.5101926  | 0 | 1        | 1 |
| Intestinal immune network for IgA production     | 8118  | KEGG        | 9606 | 2  | 44  | 0.0237401 | 0.5101926  | 0 | 1        | 1 |
| Pyruvate metabolism                              | 13592 | REACTOME    | 9606 | 0  | 24  | 1         | 1          | 1 | 0.025829 | 1 |

|  |       |             |      |   |    |           |            |   |          |   |
|--|-------|-------------|------|---|----|-----------|------------|---|----------|---|
| LPA receptor mediated events                                     | 15008 | PID NCI     | 9606 | 2 | 46 | 0.0257957 | 0.54928363 | 0 | 1        | 1 |
| Acetylation and deacetylation of rela in nucleus                 | 4016  | PID BIOCART | 9606 | 1 | 5  | 0.0269207 | 0.56290872 | 0 | 1        | 1 |
| Alternative complement activation                                | 13053 | REACTOME    | 9606 | 1 | 5  | 0.0269207 | 0.56290872 | 0 | 1        | 1 |
| Transport of Mature Transcript to Cytoplasm                      | 18637 | REACTOME    | 9606 | 0 | 25 | 1         | 1          | 1 | 0.026892 | 1 |
| Asthma   | 2818  | KEGG        | 9606 | 0 | 28 | 1         | 1          | 1 | 0.030075 | 1 |
| mRNA 3'-end processing   | 13667 | REACTOME    | 9606 | 0 | 30 | 1         | 1          | 1 | 0.032191 | 1 |
| Activation of C3 and C5  | 13049 | REACTOME    | 9606 | 1 | 6  | 0.0322189 | 0.65026209 | 0 | 1        | 1 |
| Classical antibody-mediated complement activation                | 13051 | REACTOME    | 9606 | 1 | 6  | 0.0322189 | 0.65026209 | 0 | 1        | 1 |
| IL-6 signaling   | 16155 | INOH        | 9606 | 1 | 6  | 0.0322189 | 0.65026209 | 0 | 1        | 1 |
| Interleukin-1 processing   | 13085 | REACTOME    | 9606 | 1 | 6  | 0.0322189 | 0.65026209 | 0 | 1        | 1 |
| ATF-2 transcription factor network                               | 15253 | PID NCI     | 9606 | 2 | 55 | 0.0358868 | 0.71804501 | 0 | 1        | 1 |
| EGFR Transactivation by Gastrin                                  | 13218 | REACTOME    | 9606 | 1 | 7  | 0.0374889 | 0.73738804 | 0 | 1        | 1 |
| Yaci and bcma stimulation of b cell immune response              | 4151  | PID BIOCART | 9606 | 1 | 7  | 0.0374889 | 0.73738804 | 0 | 1        | 1 |
| MAP kinase activation in TLR cascade                             | 18088 | REACTOME    | 9606 | 2 | 57 | 0.0383062 | 0.74713272 | 0 | 1        | 1 |
| Class C/3 (Metabotropic glutamate/pheromone receptor signaling)  | 13227 | REACTOME    | 9606 | 0 | 39 | 1         | 1          | 1 | 0.041665 | 1 |
| Cleavage of Growing Transcript in the Terminating Complex        | 13761 | REACTOME    | 9606 | 0 | 39 | 1         | 1          | 1 | 0.041665 | 1 |
| RNA Polymerase II Transcription Termination                      | 17068 | REACTOME    | 9606 | 0 | 39 | 1         | 1          | 1 | 0.041665 | 1 |
| ERK2 activation  | 13001 | REACTOME    | 9606 | 1 | 8  | 0.0427308 | 0.80632647 | 0 | 1        | 1 |
| IRAK2 mediated activation of TAK1 complex                        | 13033 | REACTOME    | 9606 | 1 | 8  | 0.0427308 | 0.80632647 | 0 | 1        | 1 |
| IRAK2 mediated activation of TAK1 complex upon MyD88 recruitment | 13038 | REACTOME    | 9606 | 1 | 8  | 0.0427308 | 0.80632647 | 0 | 1        | 1 |
| Pertussis toxin-insensitive ccr5 signaling in macrophages        | 4060  | PID BIOCART | 9606 | 1 | 8  | 0.0427308 | 0.80632647 | 0 | 1        | 1 |
| Shigellosis  | 10374 | KEGG        | 9606 | 2 | 61 | 0.0433263 | 0.81097117 | 0 | 1        | 1 |
| Pyruvate metabolism and Citric Acid (TCA) cycle                  | 17168 | REACTOME    | 9606 | 0 | 45 | 1         | 1          | 1 | 0.047934 | 1 |
| ERK1 activation  | 13000 | REACTOME    | 9606 | 1 | 9  | 0.0479447 | 0.88317128 | 0 | 1        | 1 |
| Sodd/tnfr1 signaling pathway                                     | 4139  | PID BIOCART | 9606 | 1 | 9  | 0.0479447 | 0.88317128 | 0 | 1        | 1 |

## Supplementary Table II

Human OEC transcriptional responses triggered by *B. pseudomallei* 2 hours and 24 hours post-infection. The lists represent **(A)** OECs in infection and control conditions at 2 hours; **(B)** OECs in infection and control conditions at 24 hours; **(C)** IPA Canonical Pathways activated by infection at 24 hours; and **(D)** InnateDB ORA pathway data, ranked according to P value. Red and Green indicate up- and down-regulated pathways, respectively.