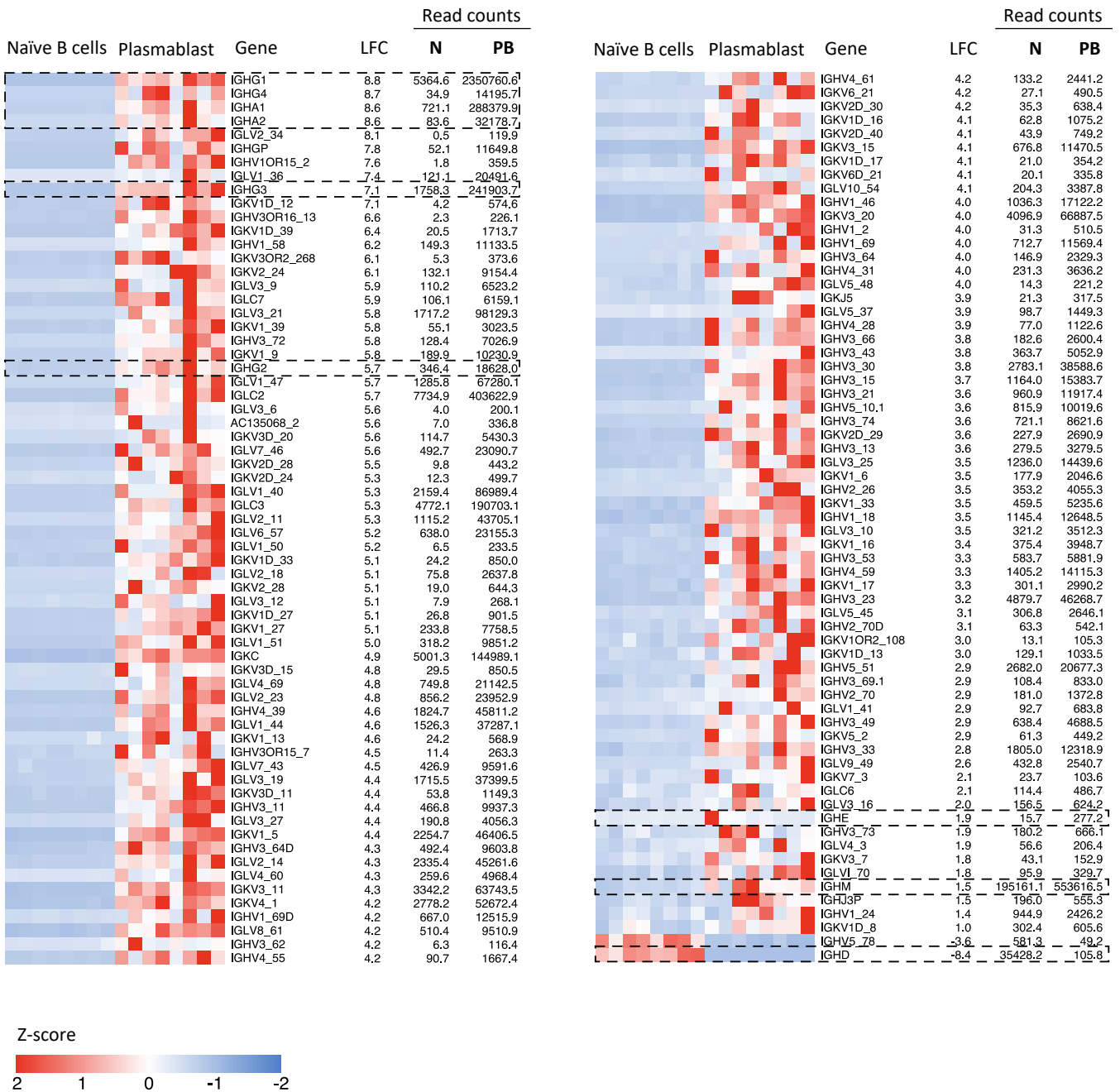


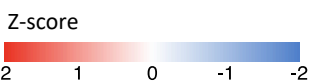
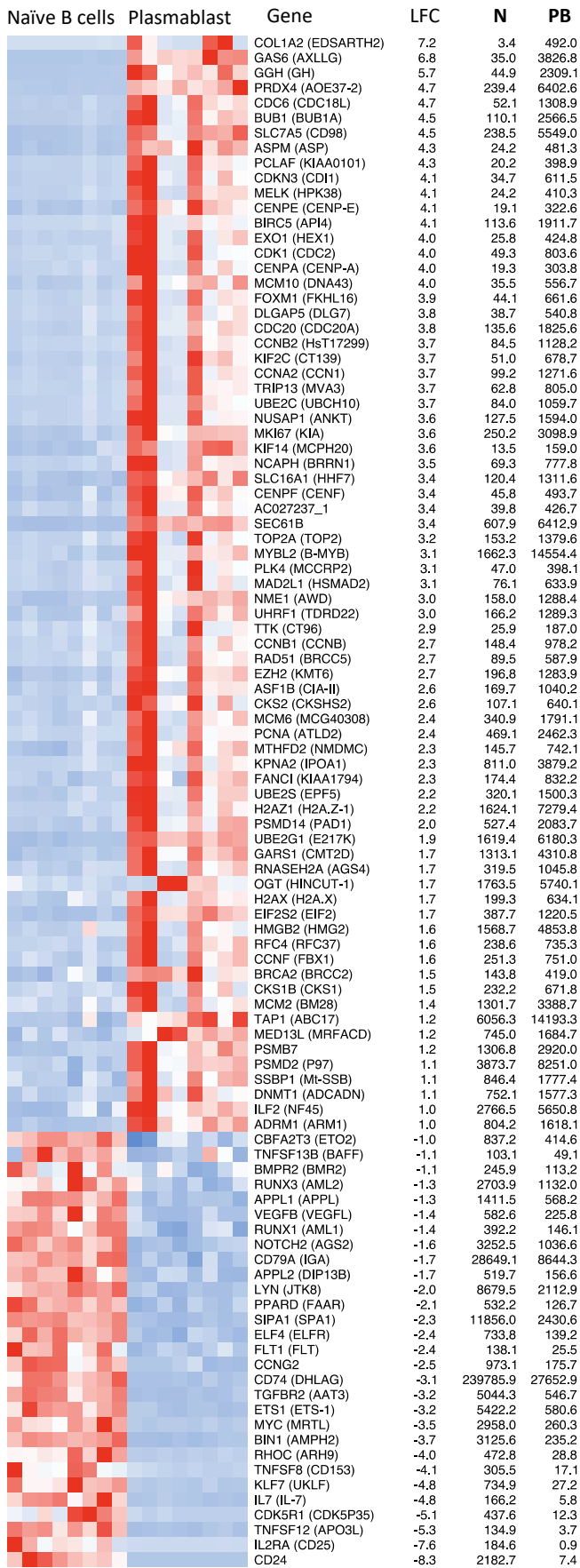
# Differentially expressed Immunoglobulin (Ig) genes



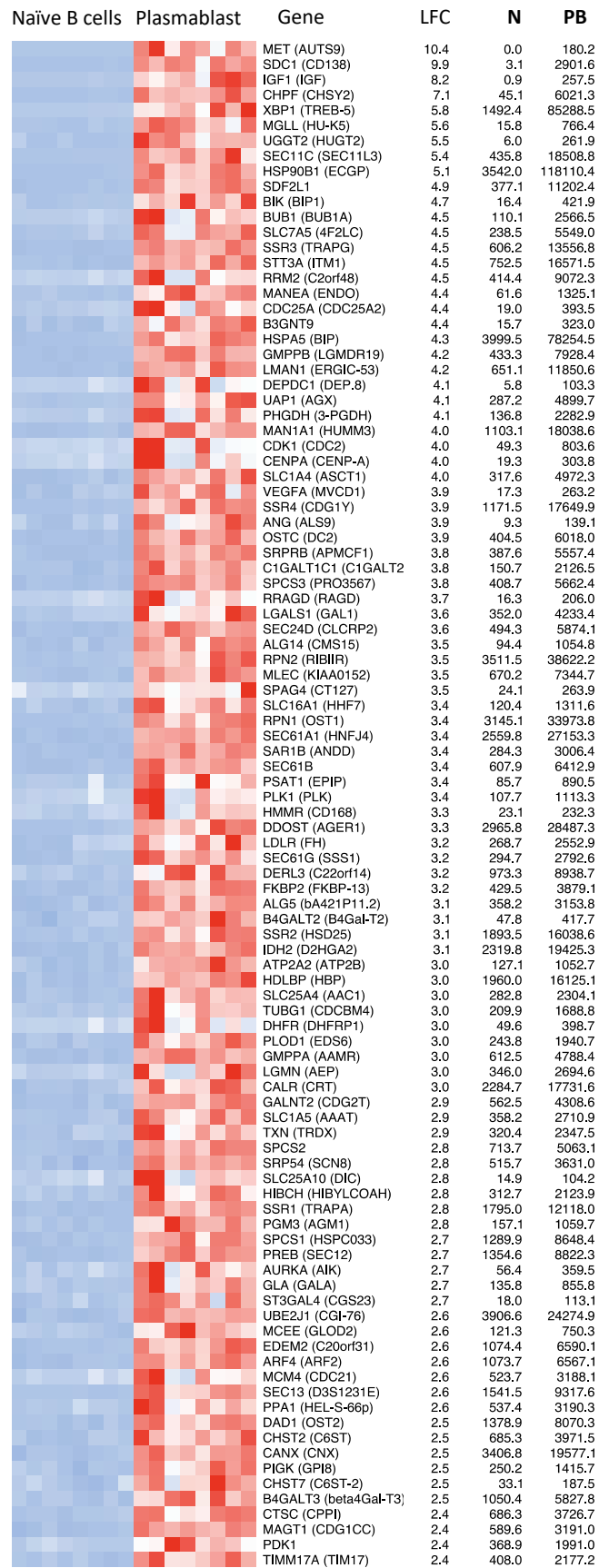
## SUPPLEMENTARY FIG 1 Heat maps of the differentially expressed Immunoglobulin genes.

130 immunoglobulin genes including variable and constant regions of heavy and light chains and pseudogenes are shown in the heatmap. IgG, IgA, IgM, IgE and IgD are shown in dotted boxes. Gradient of high to low gene expression based on z-score normalized counts is indicated from red to blue color. Genes that were significantly differential were only considered and clustered subjects using ward.D2 method. Right side of heatmap are gene name with common name in parenthesis, log2 fold change (LFC), average normalized counts of naïve B cells (N) and average normalized counts of plasmablast (PB).

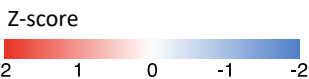
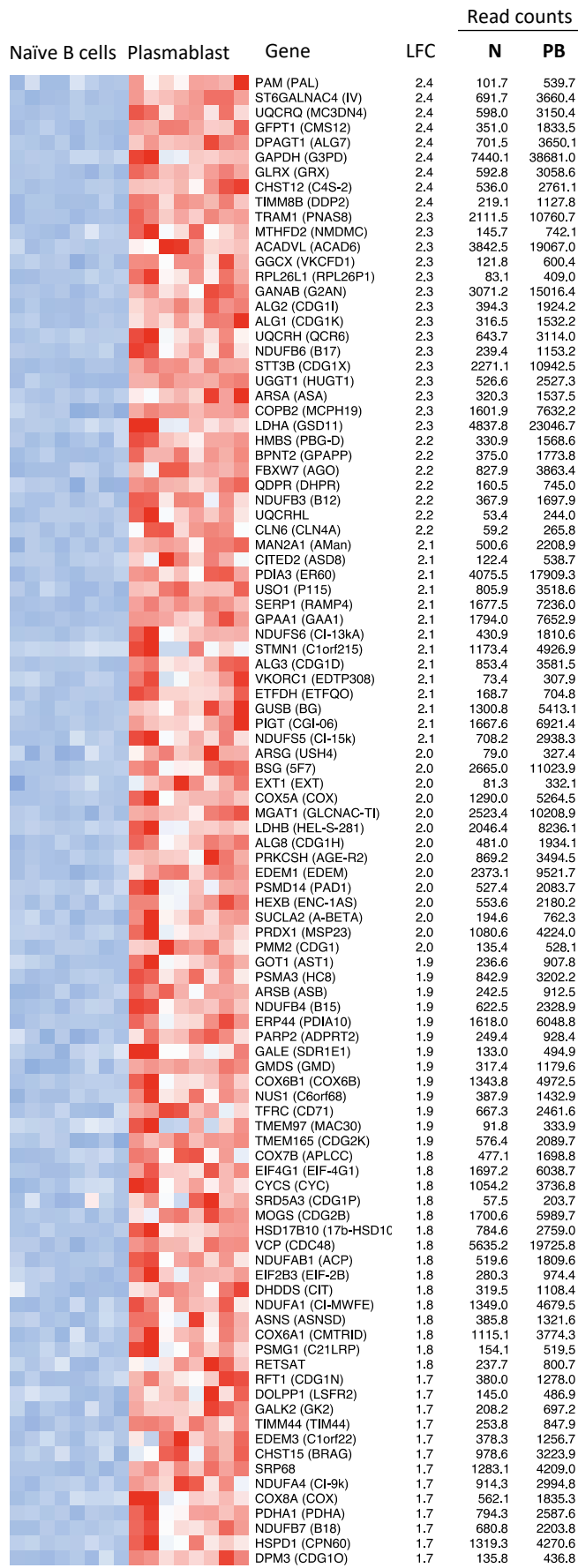
### A Proliferation



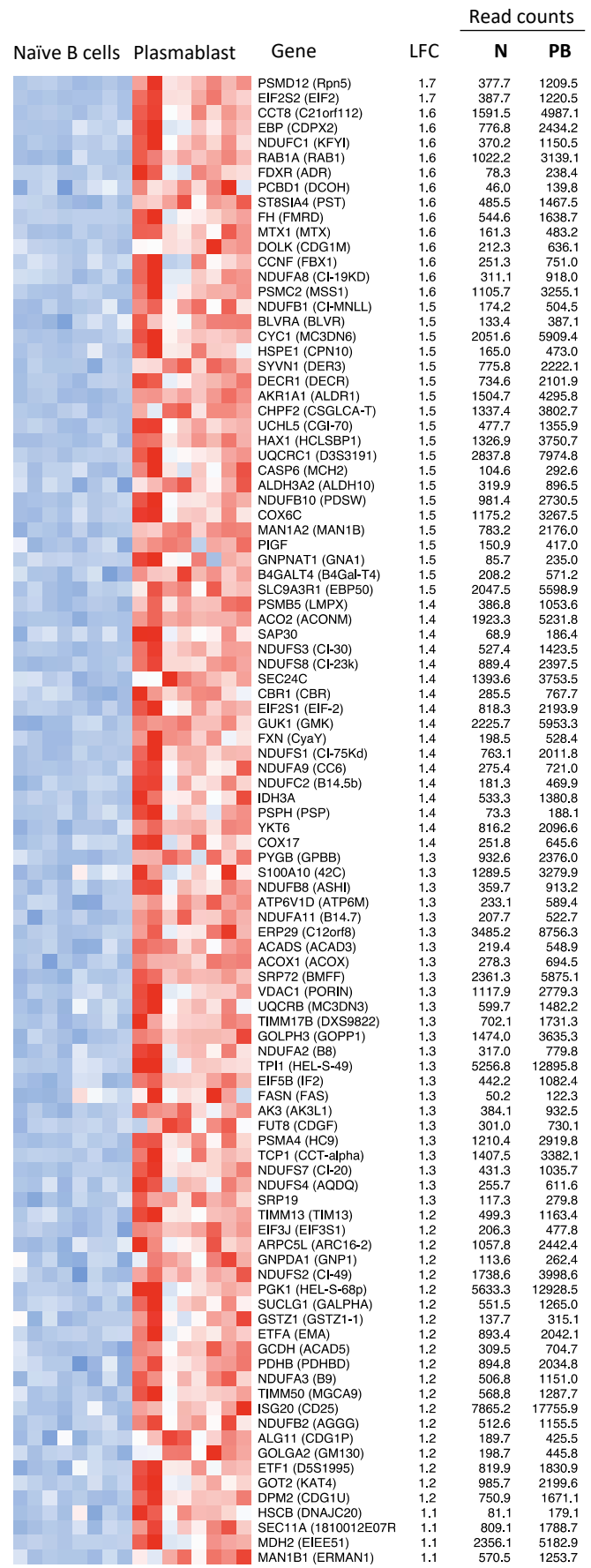
### B Metabolism



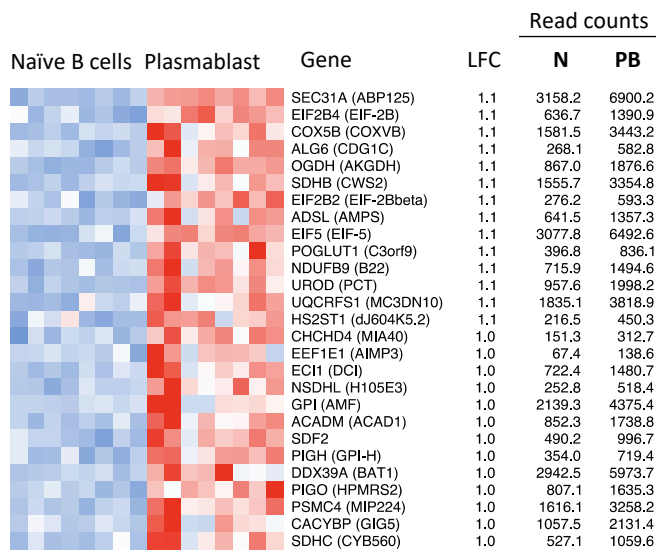
B Metabolism contd.



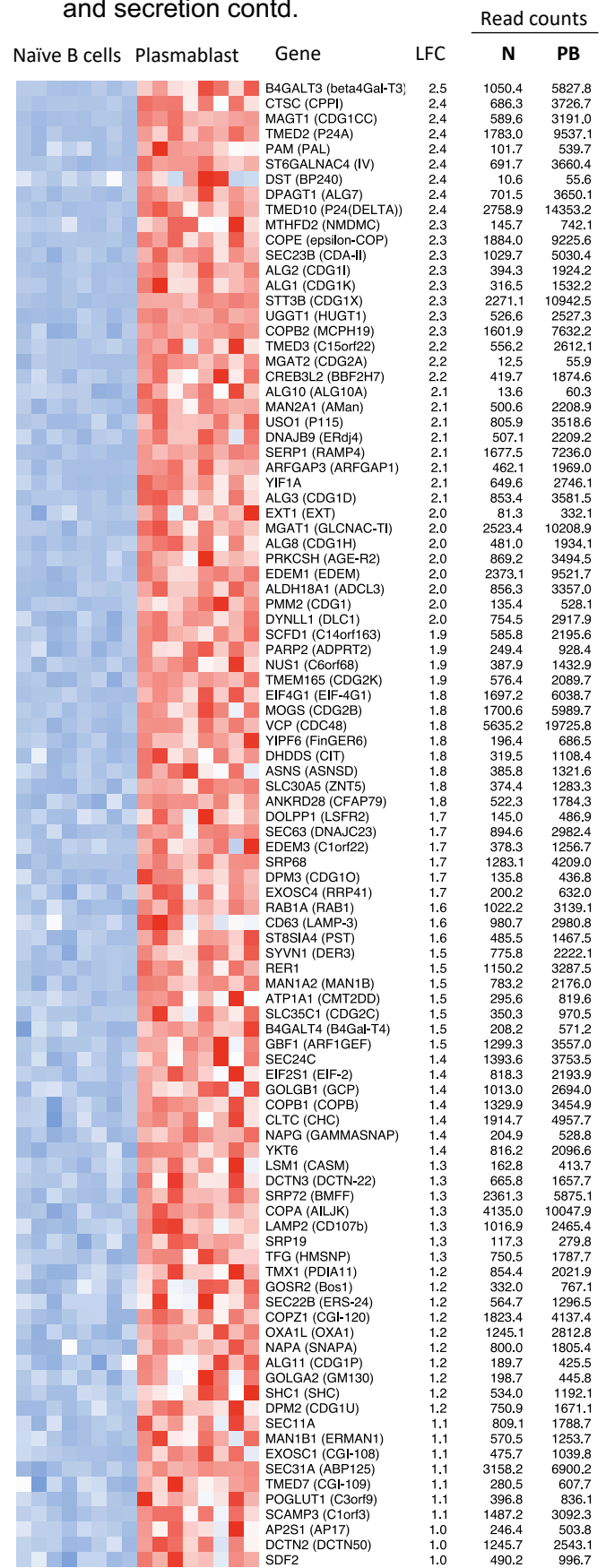
B Metabolism contd.



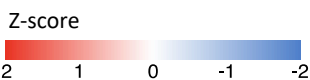
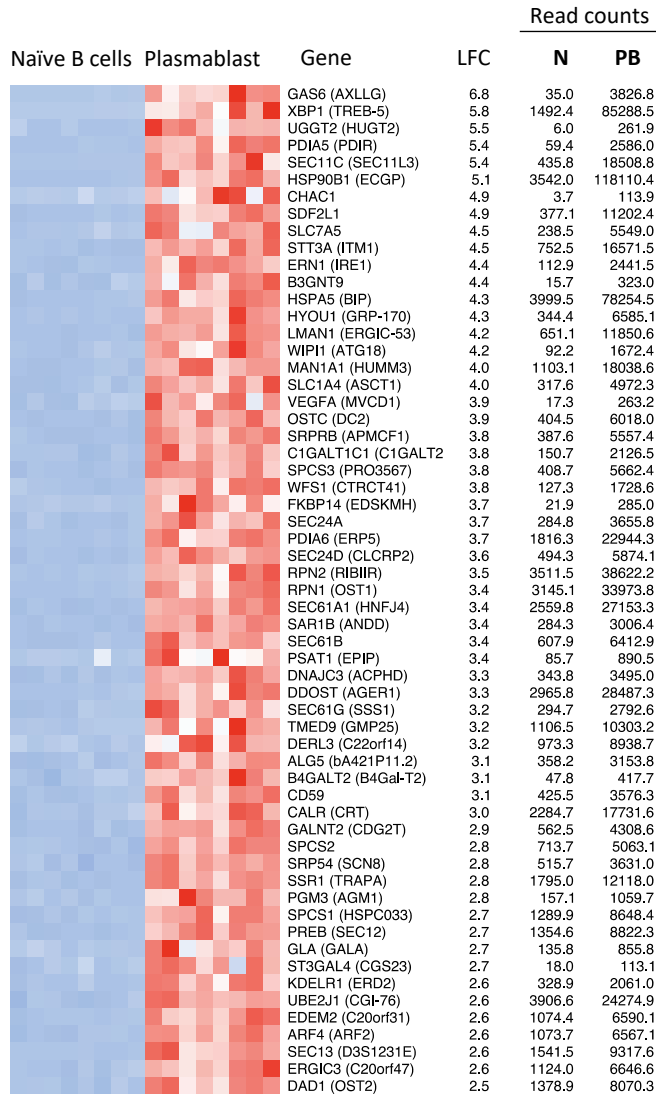
## B Metabolism contd.



## C Antibody synthesis, glycosylation and secretion contd.



## C Antibody synthesis, glycosylation and secretion



### D Growth factors

|  | Naïve B cells | Plasmablast | Gene            | LFC  | Read counts |        |
|--|---------------|-------------|-----------------|------|-------------|--------|
|  |               |             |                 |      | N           | PB     |
|  |               |             | IGF1 (IGF)      | 8.2  | 0.9         | 257.5  |
|  |               |             | BMP6 (VGR)      | 6.6  | 5.8         | 582.2  |
|  |               |             | MANF (ARMET)    | 4.5  | 238.0       | 5419.6 |
|  |               |             | VEGFA (MVCD1)   | 3.9  | 17.3        | 263.2  |
|  |               |             | BMP8B (BMP8)    | 3.2  | 22.0        | 204.5  |
|  |               |             | CD320 (8D6)     | 2.8  | 434.8       | 3089.9 |
|  |               |             | ADA2 (ADGF)     | 2.6  | 1516.1      | 9077.0 |
|  |               |             | IL12A (CLMF)    | 2.0  | 50.5        | 201.0  |
|  |               |             | MACC1 (7A5)     | 1.9  | 29.0        | 106.8  |
|  |               |             | GPI (AMF)       | 1.0  | 2139.3      | 4375.4 |
|  |               |             | TYMP (ECGF)     | 1.0  | 1733.2      | 3500.0 |
|  |               |             | RABEP2 (FRA)    | -1.2 | 899.9       | 385.1  |
|  |               |             | VEGFB (VEGFL)   | -1.4 | 582.6       | 225.8  |
|  |               |             | TGFB1 (CED)     | -1.4 | 1181.8      | 448.9  |
|  |               |             | RABEP1 (RAB5EP) | -1.9 | 2349.8      | 632.6  |
|  |               |             | AREG (AR)       | -2.0 | 180.8       | 46.7   |
|  |               |             | IL7             | -4.8 | 166.2       | 5.8    |
|  |               |             | CLCF1 (BSF-3)   | -9.4 | 316.3       | 0.4    |

### F Interferon stimulated genes (ISGs)

|  | Naïve B cells | Plasmablast | Gene               | LFC  | Read counts |         |
|--|---------------|-------------|--------------------|------|-------------|---------|
|  |               |             |                    |      | N           | PB      |
|  |               |             | IFI27L1 (FAM14B)   | 4.7  | 41.5        | 1044.8  |
|  |               |             | IFI27 (FAM14D)     | 3.9  | 950.4       | 14292.6 |
|  |               |             | IFI6 (JUN16)       | 3.7  | 752.7       | 10040.3 |
|  |               |             | APOL1              | 3.6  | 173.4       | 2101.8  |
|  |               |             | ZBP1 (C20orf183)   | 3.4  | 514.4       | 5504.1  |
|  |               |             | WARS1 (IFI53)      | 2.5  | 2902.3      | 16004.9 |
|  |               |             | LAP3               | 2.5  | 1408.7      | 7740.0  |
|  |               |             | CHST12 (C4S-2)     | 2.4  | 536.0       | 2761.1  |
|  |               |             | PSME2 (PA28B)      | 2.2  | 2184.4      | 10337.8 |
|  |               |             | ISG15 (G1P2)       | 2.1  | 1234.3      | 5243.9  |
|  |               |             | IFI35 (IFP35)      | 2.1  | 894.1       | 3751.8  |
|  |               |             | BST2 (CD317)       | 2.0  | 1422.8      | 5861.5  |
|  |               |             | IFNAR2 (IFN-R)     | 2.0  | 516.4       | 2118.2  |
|  |               |             | TNFSF10 (TRAIL)    | 1.9  | 398.9       | 1467.3  |
|  |               |             | ODF3B (FAP123)     | 1.8  | 265.9       | 944.9   |
|  |               |             | IFI27L2 (FAM14A)   | 1.8  | 234.1       | 829.8   |
|  |               |             | IFITM1 (SEP27)     | 1.6  | 1696.4      | 5249.4  |
|  |               |             | IFI44 (MTAP44)     | 1.6  | 421.3       | 1282.8  |
|  |               |             | USP18 (ISG43)      | 1.6  | 483.9       | 1463.1  |
|  |               |             | MX1 (IFI-78K)      | 1.6  | 4321.5      | 12739.2 |
|  |               |             | APOL6              | 1.4  | 462.4       | 1246.1  |
|  |               |             | APOBEC3G (A3G)     | 1.4  | 1757.3      | 4609.8  |
|  |               |             | ISG20 (CD25)       | 1.2  | 7865.2      | 17755.9 |
|  |               |             | NAPA               | 1.2  | 800.0       | 1805.4  |
|  |               |             | HSH2D (ALX)        | 1.1  | 2252.8      | 4776.2  |
|  |               |             | CGAS (C6orf150)    | 1.1  | 212.8       | 442.6   |
|  |               |             | OAS2               | 1.0  | 2334.9      | 4727.3  |
|  |               |             | IRF7 (IMD39)       | 1.0  | 2900.3      | 5864.0  |
|  |               |             | TYMP (ECGF)        | 1.0  | 1733.2      | 3500.0  |
|  |               |             | STAT1              | 1.0  | 4062.7      | 8189.1  |
|  |               |             | TRIM33 (ECTO)      | -1.1 | 1482.2      | 708.5   |
|  |               |             | ZC3HAV1 (ARTD13)   | -1.1 | 3998.7      | 1893.7  |
|  |               |             | SP100              | -1.1 | 6960.5      | 3247.2  |
|  |               |             | DDIT4 (Dig2)       | -1.2 | 1482.1      | 644.6   |
|  |               |             | SLC15A3 (OCTP)     | -1.3 | 168.2       | 70.2    |
|  |               |             | RNASEL (PRCA1)     | -1.3 | 303.0       | 124.8   |
|  |               |             | TRIM14             | -1.4 | 1227.5      | 464.9   |
|  |               |             | ZNFX1              | -1.5 | 2055.2      | 741.0   |
|  |               |             | DDX58 (RIG-I)      | -1.5 | 690.2       | 239.0   |
|  |               |             | HERC6              | -1.6 | 629.8       | 214.1   |
|  |               |             | SP110 (IFI41)      | -1.6 | 342.0       | 112.6   |
|  |               |             | IFIT5 (ISG58)      | -1.7 | 505.9       | 160.6   |
|  |               |             | SUN2 (UNC84B)      | -1.7 | 7217.0      | 2277.7  |
|  |               |             | PARP12 (ARTD12)    | -1.8 | 2610.5      | 741.6   |
|  |               |             | PPM1K (BDP)        | -1.9 | 3131.4      | 837.0   |
|  |               |             | IFITM3 (1-8U)      | -1.9 | 1803.0      | 481.1   |
|  |               |             | NUB1 (BS4)         | -1.9 | 1201.1      | 311.2   |
|  |               |             | DTX3L              | -2.0 | 1505.9      | 369.4   |
|  |               |             | XAF1 (BIRC4BP)     | -2.1 | 1707.4      | 391.8   |
|  |               |             | IFITM2 (1-8D)      | -2.2 | 5307.0      | 1181.0  |
|  |               |             | MX2 (MXB)          | -2.6 | 928.6       | 158.4   |
|  |               |             | GBP2               | -2.6 | 1268.2      | 214.8   |
|  |               |             | LGALS9 (HUAT)      | -2.6 | 466.7       | 78.5    |
|  |               |             | IFIT3 (CIG-49)     | -2.8 | 1108.9      | 161.7   |
|  |               |             | MAP3K14 (FTLDCR1B) | -2.8 | 1777.6      | 253.7   |
|  |               |             | CD74 (DHLG)        | -3.1 | 239785.9    | 27652.9 |
|  |               |             | JADE2 (JADE-2)     | -3.3 | 1207.8      | 121.8   |
|  |               |             | TRIM22             | -4.0 | 6784.2      | 415.7   |
|  |               |             | DDX60L             | -4.4 | 636.1       | 30.3    |
|  |               |             | IFIT2 (G10P2)      | -4.6 | 628.5       | 25.8    |
|  |               |             | DDX60              | -4.7 | 745.4       | 28.4    |
|  |               |             | GBP4 (Mpa2)        | -4.9 | 2651.8      | 91.1    |

### E Transcription factors

|  | Naïve B cells | Plasmablast | Gene                | LFC  | Read counts |         |
|--|---------------|-------------|---------------------|------|-------------|---------|
|  |               |             |                     |      | N           | PB      |
|  |               |             | BHLHA15 (BHLHB8)    | 7.7  | 7.3         | 1483.0  |
|  |               |             | MIXL1 (MILD1)       | 7.0  | 4.4         | 558.9   |
|  |               |             | TP73 (P73)          | 6.5  | 4.3         | 393.5   |
|  |               |             | XBP1 (TREB-5)       | 5.8  | 1492.4      | 85288.5 |
|  |               |             | E2F7                | 5.2  | 4.3         | 152.1   |
|  |               |             | PRDM1 (BLIMP1)      | 5.0  | 313.6       | 9903.2  |
|  |               |             | ZNF215 (BAZ-2)      | 4.8  | 13.2        | 369.0   |
|  |               |             | MSC (ABF-1)         | 4.5  | 6.0         | 133.5   |
|  |               |             | ARNTL2 (BMAL2)      | 4.4  | 9.5         | 207.2   |
|  |               |             | E2F8 (E2F-8)        | 4.3  | 9.6         | 185.1   |
|  |               |             | CENPA (CENP-A)      | 4.0  | 19.3        | 303.8   |
|  |               |             | FOXM1 (FKHL16)      | 3.9  | 44.1        | 661.6   |
|  |               |             | GFI1 (GFI-1)        | 3.9  | 46.0        | 673.9   |
|  |               |             | ATF5 (ATFX)         | 3.5  | 9.1         | 101.0   |
|  |               |             | E2F2 (E2F-2)        | 3.3  | 130.9       | 1272.7  |
|  |               |             | GLMP (C1orf85)      | 3.2  | 90.5        | 807.4   |
|  |               |             | MYBL2 (B-MYB)       | 3.1  | 1662.3      | 14554.4 |
|  |               |             | RUNX2 (AML3)        | 3.0  | 45.0        | 351.2   |
|  |               |             | ARID3A (BRIGHT)     | 2.9  | 98.0        | 707.3   |
|  |               |             | PRDM15 (C21orf83)   | 2.8  | 291.4       | 2073.3  |
|  |               |             | E2F1 (E2F-1)        | 2.8  | 114.9       | 807.0   |
|  |               |             | ZBTB32 (FAXF)       | 2.8  | 220.4       | 1539.2  |
|  |               |             | PREB (SEC12)        | 2.7  | 1354.6      | 8822.3  |
|  |               |             | MXD3 (BHLHC13)      | 2.6  | 88.5        | 542.6   |
|  |               |             | BHLHE41 (BHLHB3)    | 2.6  | 100.8       | 610.3   |
|  |               |             | IRF4 (LSIRF)        | 2.4  | 1254.9      | 6591.9  |
|  |               |             | CREB3L2 (BBF2H7)    | 2.2  | 419.7       | 1874.6  |
|  |               |             | ZBTB38 (CIBZ)       | 2.0  | 534.7       | 2195.9  |
|  |               |             | CREB3 (LUMAN)       | 2.0  | 672.3       | 2680.2  |
|  |               |             | KLF10 (EGF-alpha)   | 2.0  | 563.9       | 2231.0  |
|  |               |             | TET1 (CXXC6)        | 1.9  | 30.0        | 111.8   |
|  |               |             | NFE2L3 (NRF3)       | 1.9  | 34.7        | 126.8   |
|  |               |             | HMGAI1 (HMG-R)      | 1.6  | 994.4       | 2986.5  |
|  |               |             | STAT4 (SLEB11)      | 1.5  | 71.5        | 206.0   |
|  |               |             | POU2AF1 (BOB1)      | 1.5  | 2718.5      | 7555.2  |
|  |               |             | ZNF706 (HSPC038)    | 1.4  | 1416.1      | 3838.1  |
|  |               |             | ZNF841              | 1.4  | 100.9       | 269.9   |
|  |               |             | ZFAT (AITD3)        | 1.4  | 190.1       | 495.9   |
|  |               |             | ZEB2 (HSPC082)      | -4.8 | 1891.9      | 67.3    |
|  |               |             | ZNF835 (BC37295_3)  | -4.8 | 117.5       | 4.0     |
|  |               |             | ZBTB4 (KAISO-L1)    | -4.8 | 985.1       | 34.8    |
|  |               |             | ZNF318 (HRIHFB2436) | -4.8 | 5079.7      | 178.3   |
|  |               |             | PAX5 (ALL3)         | -4.8 | 3163.9      | 110.5   |
|  |               |             | L3MBTL3 (MBT-1)     | -4.9 | 238.2       | 7.9     |
|  |               |             | ZNF439              | -4.9 | 306.0       | 10.5    |
|  |               |             | IRF8 (H-ICSBP)      | -5.0 | 15464.6     | 486.8   |
|  |               |             | REL (C-Rel)         | -5.1 | 2072.0      | 59.0    |
|  |               |             | ZNF699 (hang)       | -5.1 | 131.7       | 3.5     |
|  |               |             | JAZF1 (TIP27)       | -5.2 | 349.1       | 9.9     |
|  |               |             | ZMAT1               | -5.3 | 196.4       | 4.6     |
|  |               |             | BCL11A (BCL11A-L)   | -5.4 | 2183.9      | 50.0    |
|  |               |             | ZNF677              | -5.5 | 150.8       | 3.1     |
|  |               |             | FOXP1 (12CC4)       | -5.6 | 9804.8      | 206.9   |
|  |               |             | ZNF502              | -5.6 | 131.0       | 2.6     |
|  |               |             | SATB1               | -5.6 | 1244.9      | 25.6    |
|  |               |             | TGIF1 (HPE4)        | -5.9 | 785.6       | 13.4    |
|  |               |             | SCML4 (uJ47M23.1)   | -6.1 | 528.3       | 7.5     |
|  |               |             | ZNF831 (C20orf174)  | -6.3 | 310.5       | 3.8     |
|  |               |             | ZNF665 (ZFP160L)    | -6.3 | 140.2       | 1.7     |
|  |               |             | ZNF571 (HSPC059)    | -6.7 | 133.8       | 1.2     |
|  |               |             | ZBTB16 (PLZF)       | -7.0 | 2480.2      | 19.7    |
|  |               |             | ZSCAN18 (ZNF447)    | -7.0 | 539.2       | 3.9     |
|  |               |             | KLF9 (BTEB)         | -7.1 | 306.8       | 2.3     |
|  |               |             | ZNF629 (ZNF)        | -7.2 | 148.1       | 1.1     |
|  |               |             | HHEX (HEX)          | -7.4 | 2173.0      | 13.2    |
|  |               |             | SPIB (SPI-B)        | -7.4 | 3292.6      | 19.3    |
|  |               |             | BACH2 (BTBD25)      | -7.4 | 2591.8      | 14.6    |
|  |               |             | CASZ1 (CAS11)       | -7.6 | 118.1       | 0.7     |
|  |               |             | ZFP28 (mkr5)        | -8.6 | 110.2       | 0.0     |
|  |               |             | ZNF415 (Pact)       | -8.6 | 113.9       | 0.0     |
|  |               |             | ZNF667 (MIPU1)      | -9.0 | 143.8       | 0.0     |
|  |               |             | ZNF135 (ZNF61)      | -9.6 | 231.0       | 0.0     |

Z-score



**SUPPLEMENTARY FIG 2** *Heat maps of the differentially expressed genes (DEGs) pertaining to select biological processes.* Heatmaps show genes related to **(A)** Proliferation, **(B)** Metabolism, **(C)** Antibody synthesis, glycosylation and secretion, **(D)** Growth factors, **(E)** Transcription factors (TFs) – top 50 upregulated and top 50 downregulated and **(F)** Interferon stimulated genes (ISGs). Gradient of high to low gene expression based on z-score normalized counts is indicated from red to blue color. Genes that were significantly differential are shown. Right side of heatmaps are gene name with common name in parenthesis, log<sub>2</sub> fold change (LFC), average normalized counts of naïve B cells (N) and average normalized counts of plasmablast (PB).