Figure 1

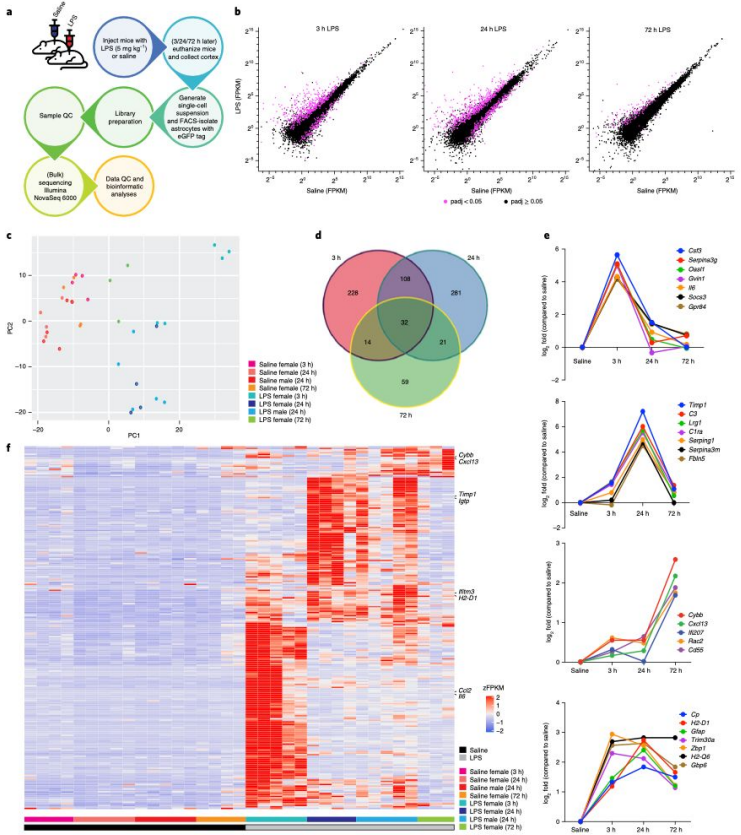


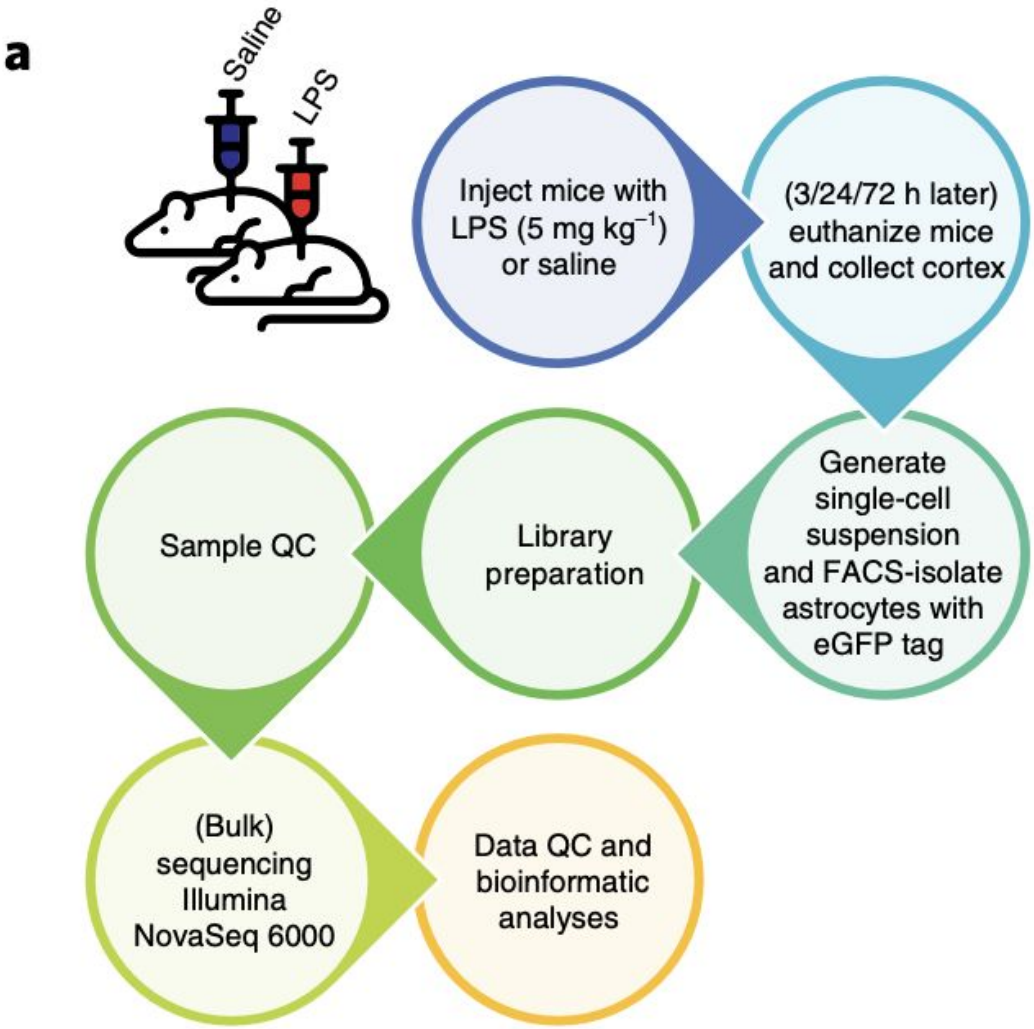
Fig. 1 | Astrocytes undergo a fast inflammatory transition that drastically changes over time. **a**, Schematic of experimental approach for astrocyte bulk sequencing of saline- and LPS-injected *Aldh1l1eGFP* mice. **b**, FPKM scatter plots of all analyzed genes of FACS-purified astrocytes comparing saline- to LPS-injected female mice at 3 h, 24 h and 72 h after injection. Genes highlighted in purple are *P*adj < 0.05, saline 3 h (*n* = 4 animals), 24 h (*n* = 5), 72 h (*n* = 4) and LPS 3 h (*n* = 5), 24 h (*n* = 4) and 72 h (*n* = 3). **c**, PCA of samples in **b** and saline- and LPS-injected male mice at 24 h after injection (saline *n* = 5, LPS *n* = 5). **d**, Venn diagram of genes induced ≥1 log2 fold with *P*adj < 0.05 in any of three time points (female mice). **e**, log2 fold induction of genes primarily induced at 3 h (top panel), 24 h (second panel) or 72 h (third panel) as well as genes significantly upregulated at all three time points (bottom panel), all female. **f**, Heat map of genes strongly induced (≥2 log2 fold with *Padj* < 0.05, z-transformed FPKM values) in any of the three time points and clustered according to the induction pattern over time, all three time points of female mice plus the 24-h injection time point for male mice.

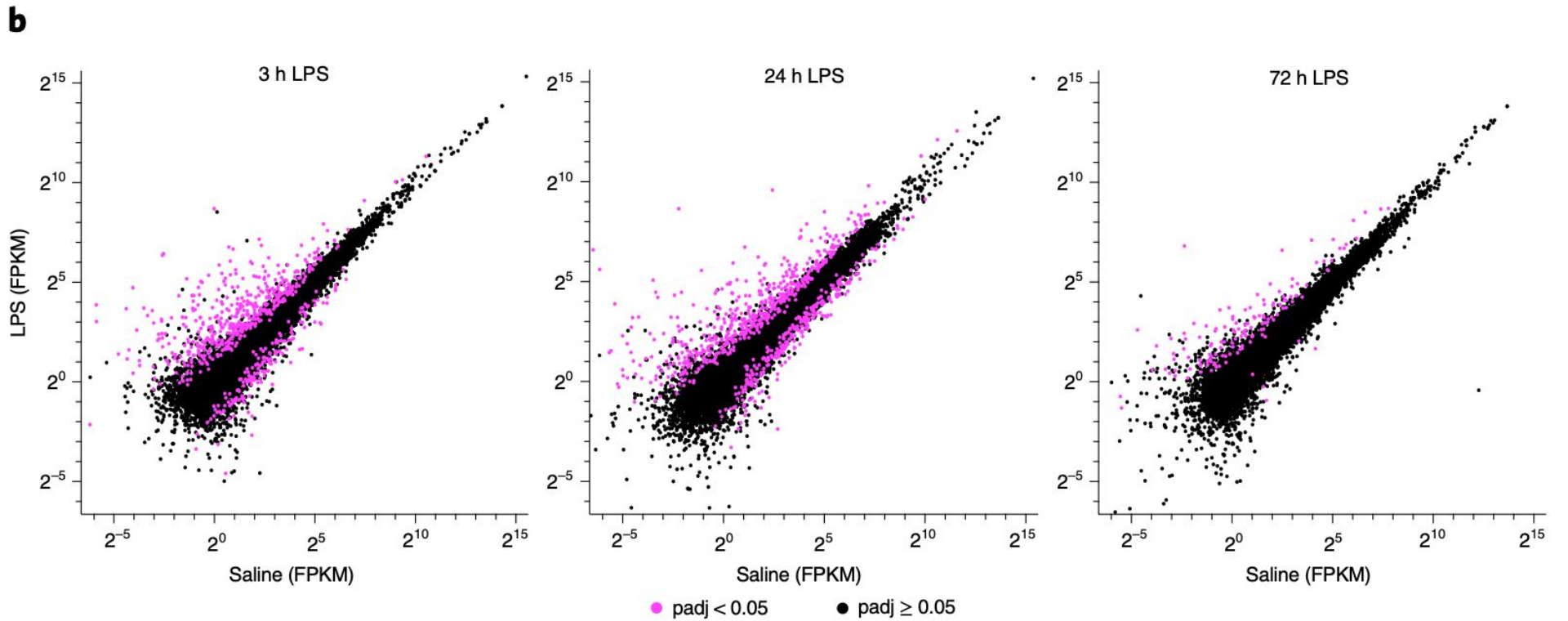
For each figure plot/result, focus on:

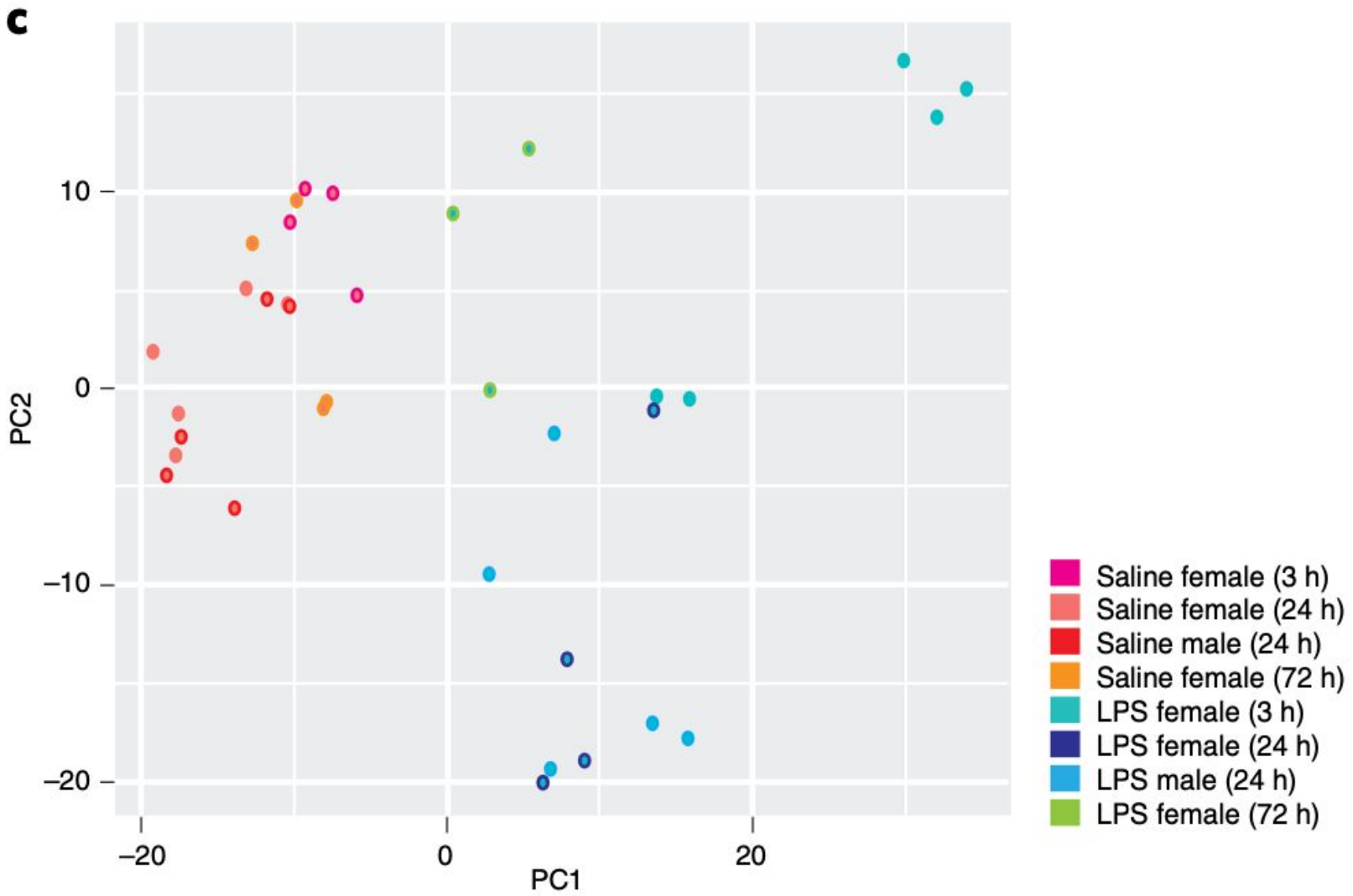
- What is a dot, column, and/or row represents
- X-axis unit
- Y-axis unit
- Overarching conclusion

Try not to:

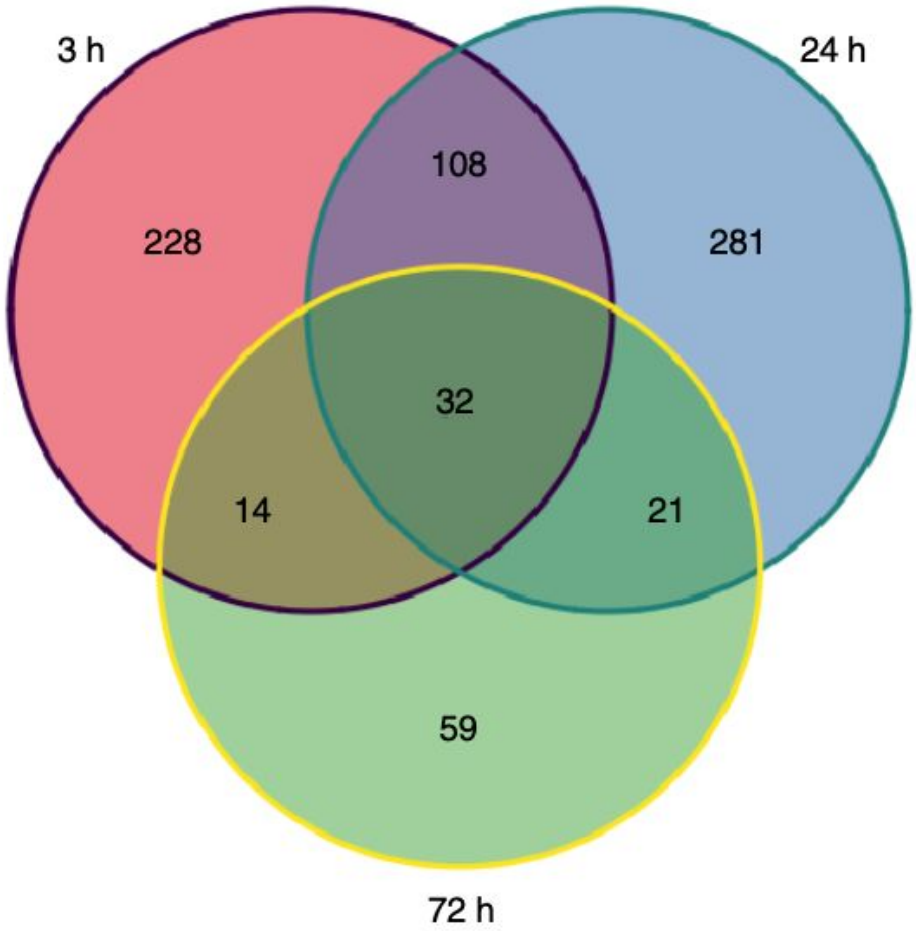
- Get hung-up on the technical minutiae


a
Saline
LPS
Inject mice with LPS (5 mg kg^{-1}) or saline
(3/24/72 h later) euthanize mice and collect cortex
Generate single-cell suspension and FACS-isolate astrocytes with eGFP tag
Library preparation
Sample QC
(Bulk) sequencing Illumina NovaSeq 6000
Data QC and bioinformatic analyses


b
3 h LPS
24 h LPS
72 h LPS
LPS (FPKM)
Saline (FPKM)
Saline (FPKM)
Saline (FPKM)
padj < 0.05
padj ≥ 0.05

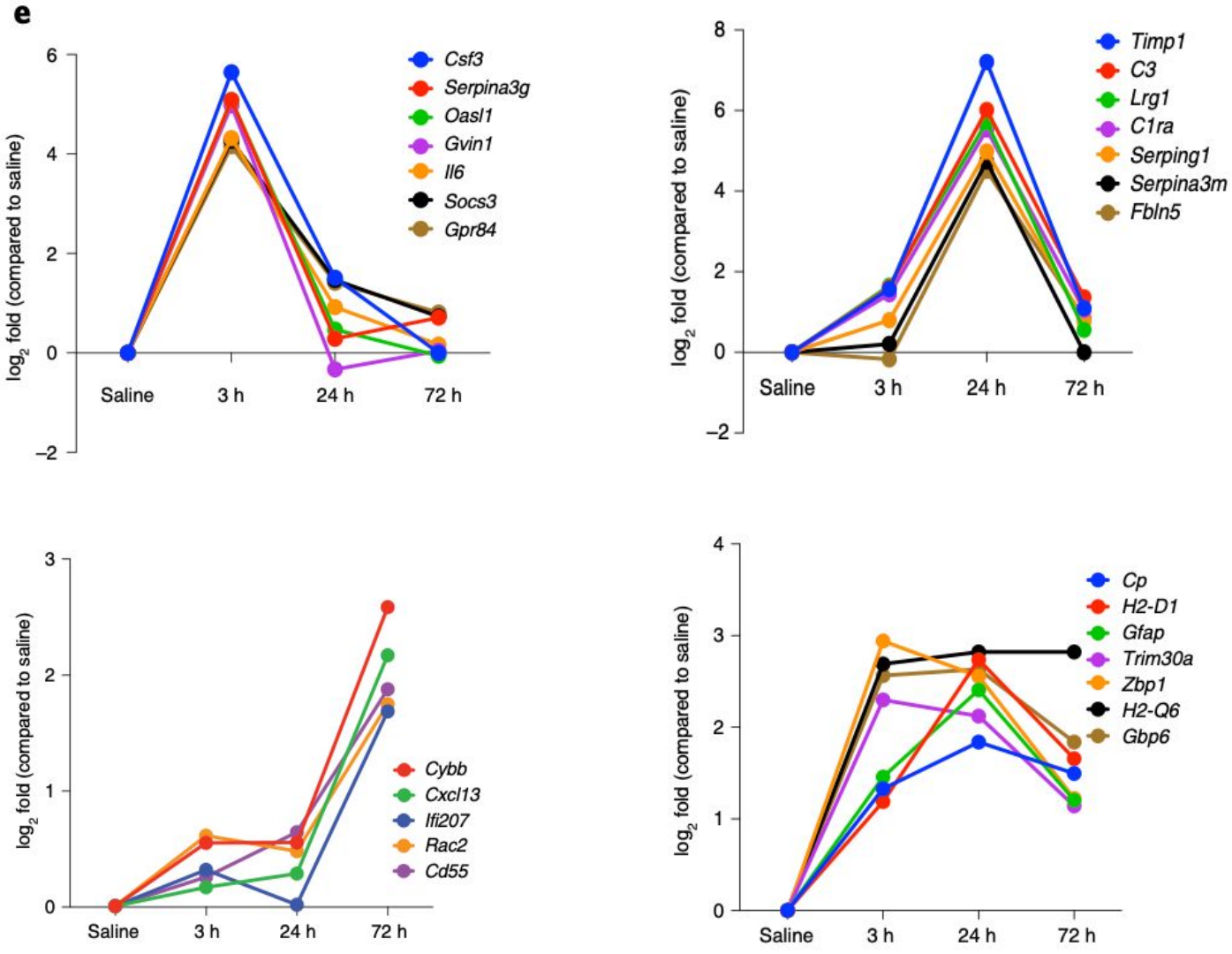

c
10
0
−10
−20
PC2
−20
0
20
PC1
Saline female (3 h)
Saline female (24 h)
Saline male (24 h)
Saline female (72 h)
LPS female (3 h)
LPS female (24 h)
LPS male (24 h)
LPS female (72 h)

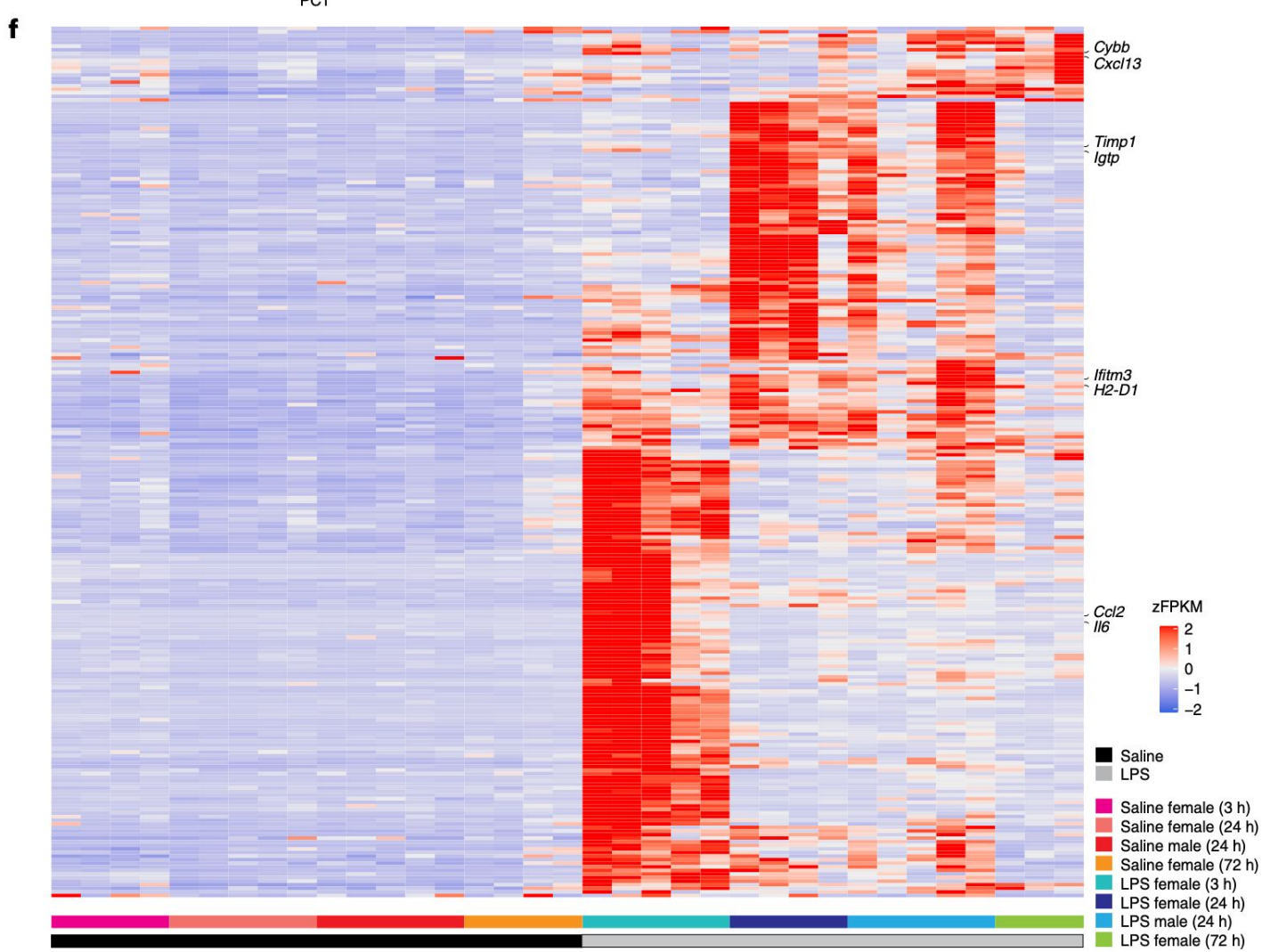
d



h)

h)


e
log2 fold (compared to saline)
Saline
3 h
24 h
72 h
Csf3
Serpina3g
Oasl1
Gvin1
Il6
Socs3
Gpr84
Timp1
C3
Lrg1
C1ra
Serping1
Serpina3m
Fbln5
Cybb
Cxcl13
Ifi207
Rac2
Cd55
Cp
H2-D1
Gfap
Trim30a
Zbp1
H2-Q6
Gbp6


f
PC1
Cybb
Cxcl13
Timp1
Igtp
Ifitm3
H2-D1
Ccl2
Il6
zFPKM
2
1
0
−1
−2
Saline
LPS
Saline female (3 h)
Saline female (24 h)
Saline male (24 h)
Saline female (72 h)
LPS female (3 h)
LPS female (24 h)
LPS male (24 h)
LPS female (72 h)