

## SUPPLEMENTAL DATA

Table S1 CyTOF antibody Panel

Cell identify markers		
Antibodies	Clone	Metal lab
Anti-mouse Ly6G	IA8	141Pr
Anti-mouse CD11c	N418	142Nd
Anti-mouse Ly6C	H1.4	162Dy
Anti-mouse CD45	30-F11	147Sm
Anti-mouse CD11b	M1/70	148Nd
Anti-mouse B220	RA3-6B2	176Yb
Anti-mouse CD25	3C7	151Eu
Anti-mouse CD3	145-2C11	165Ho
Anti-mouse F4/80	BM8	159Tb
Anti-mouse CD45RB	C363.16A	145Nd
Anti-mouse CD8	53-6.7	168Er
Anti-mouse TCR $\beta$	H57-597	169Tm
Anti-mouse CD49b	HMa2	170Er
Anti-mouse CD44	IM7	150Nd
Anti-mouse CD4	RM4-5	172Yb
DNA staining		191/193Ir
Live/dead sating		195Pt
Barcoding		102-110Pd
Phosphorylation markers		
Anti-mouse p4E-BP1	236B4	149Sm
Anti-mouse pAKT	D9E	152Sm
Anti-mouse pS6	S235/S236	175Lu
Anti-mouse pPLCg2	K86-889.37	144Nd
Anti-mouse pEGFR	D7A5	146Nd
Anti-mouse pStat1	4a	153Eu

Anti-mouse pStat3	4	158Gd
Anti-mouse pStat4	38	174Yb
Anti-mouse p38	T180/Y182	156Gd
Anti-mouse pERK1/2	D13.14.4E	171Yb

**Table S2 Identified immune cells**

<b>Cell Types</b>	<b>Defined Markers</b>
Monocyte derived macrophages (MoDMs)	CD45 <sup>hi</sup> CD11b <sup>+</sup>
Microglia derived macrophages (MiDMs)	CD45 <sup>lo</sup> CD11b <sup>+</sup>
DCs	CD45 <sup>+</sup> Cd11c <sup>+</sup>
Monocytes	CD45 <sup>+</sup> Ly6G <sup>-</sup> Ly6C <sup>+</sup>
B cells	CD45 <sup>+</sup> B220 <sup>+</sup>
CD8 T cells	CD45 <sup>+</sup> CD3 <sup>+</sup> CD8 <sup>+</sup>
CD4 T cells	CD45 <sup>+</sup> CD3 <sup>+</sup> CD4 <sup>+</sup>
Neutrophils	CD45 <sup>+</sup> Ly6G <sup>+</sup> Ly6C <sup>-</sup>
CD4 T <sub>EM</sub>	CD3 <sup>+</sup> CD4 <sup>+</sup> CD44 <sup>+</sup>
CD8 T <sub>EM</sub>	CD3 <sup>+</sup> CD8 <sup>+</sup> CD44 <sup>+</sup>
NK cells	CD45 <sup>+</sup> CD49 <sup>+</sup>

**Table S3 The changed phosphorylation status of immune cells in ischemic hemisphere**

<b>Phosphorylation Markers</b>	<b>Immune cell type have altered expression level</b>
pEGFR	MoDMs
p4E-BP1	CD4 T cells
pStat4	CD3 T cells , CD4 T cells
pStat1	MoDMs
pERK1	CD4 T cells
pS6	CD3 T cells , CD4 T cells
pStat3	CD3 T cells , CD4 T cells
pPLcg2	MoDMs
pAKT	CD4 T cells, MoDMs, DCs
pP38	CD3 T cells , CD4 T cells

## Supplemental Figure

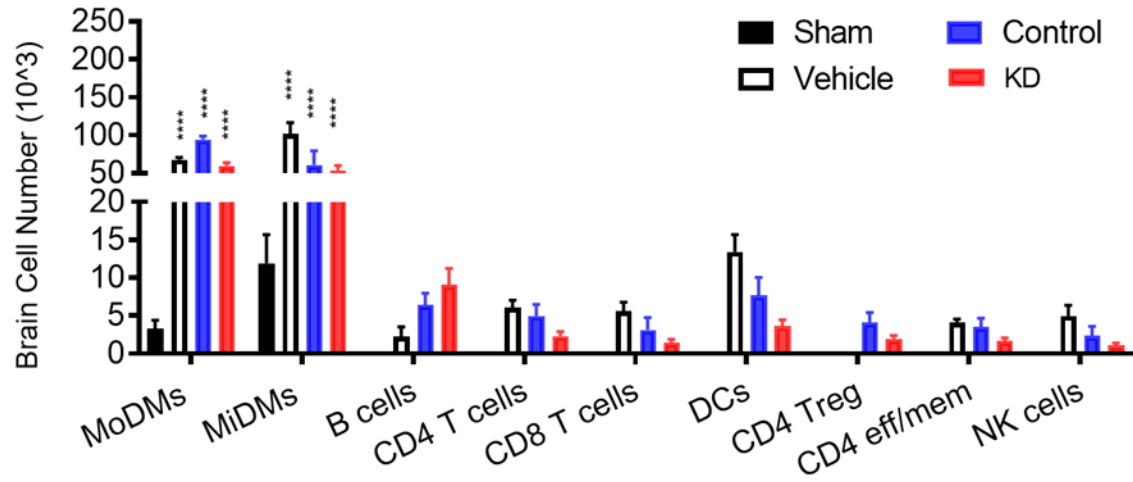


Figure S1. Characterization of post-stroke immune cell populations. Variations in the numbers of distinct immune cells in the ischemic brain hemisphere were noted (compared to the sham group, \*\*\*P<0.001).

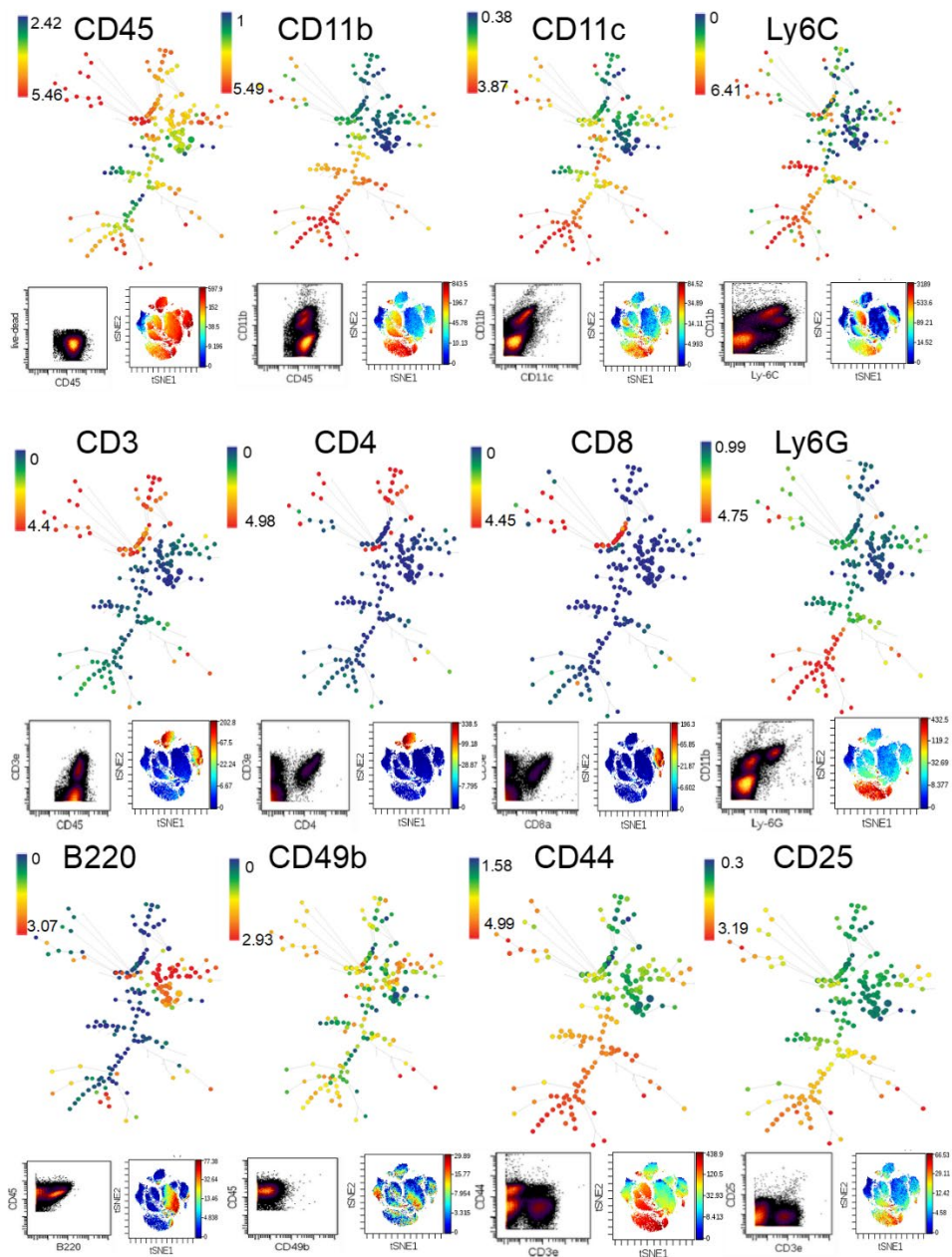


Figure S2. Analysis of blood immune cells using mass cytometry: SPADE representation (top), event plots (bottom left), and viSNE visualization (bottom right).

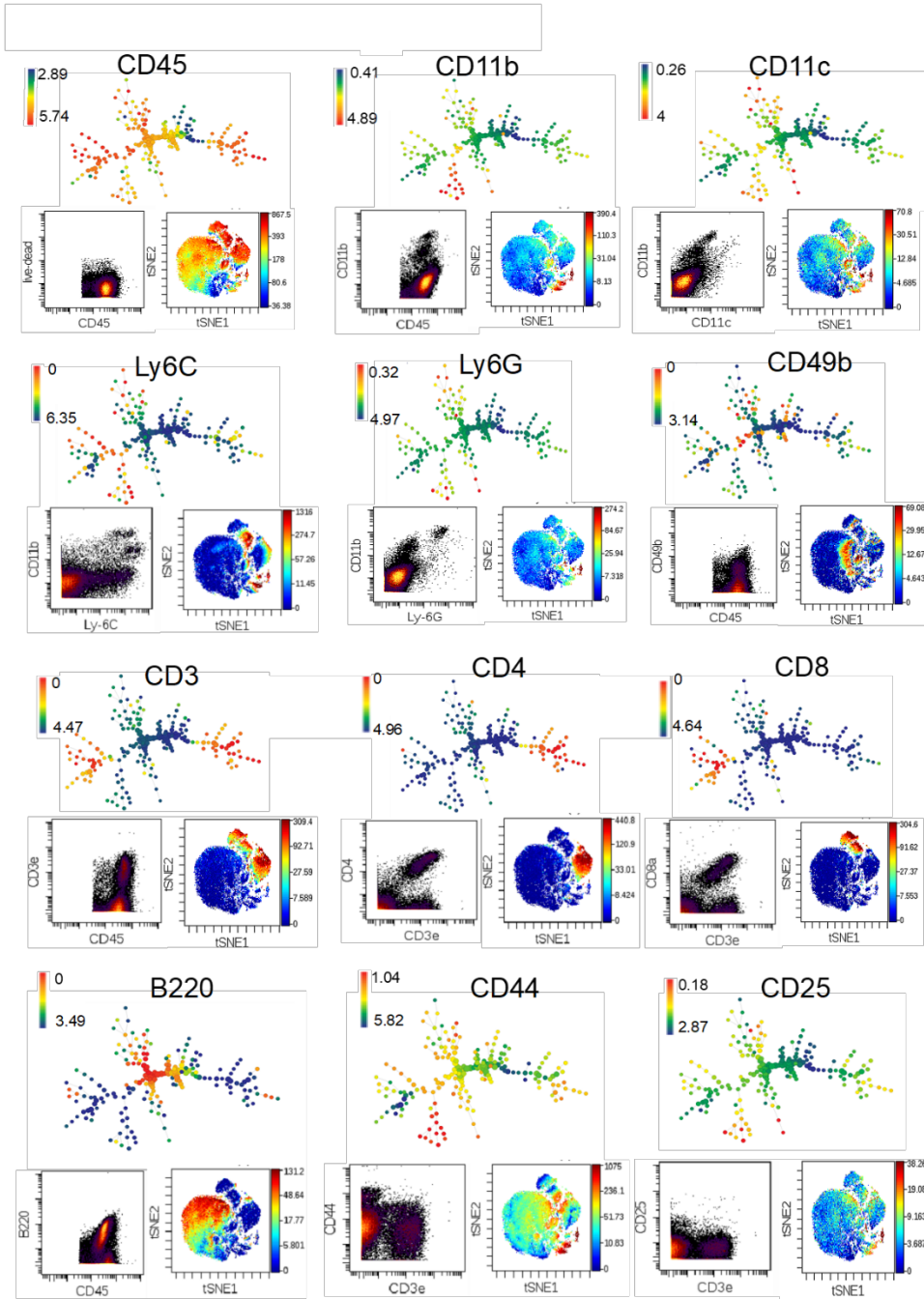


Figure S3. Analysis of spleen immune cells via mass cytometry: SPADE representation (top), event plots (bottom left), and viSNE visualization (bottom right).

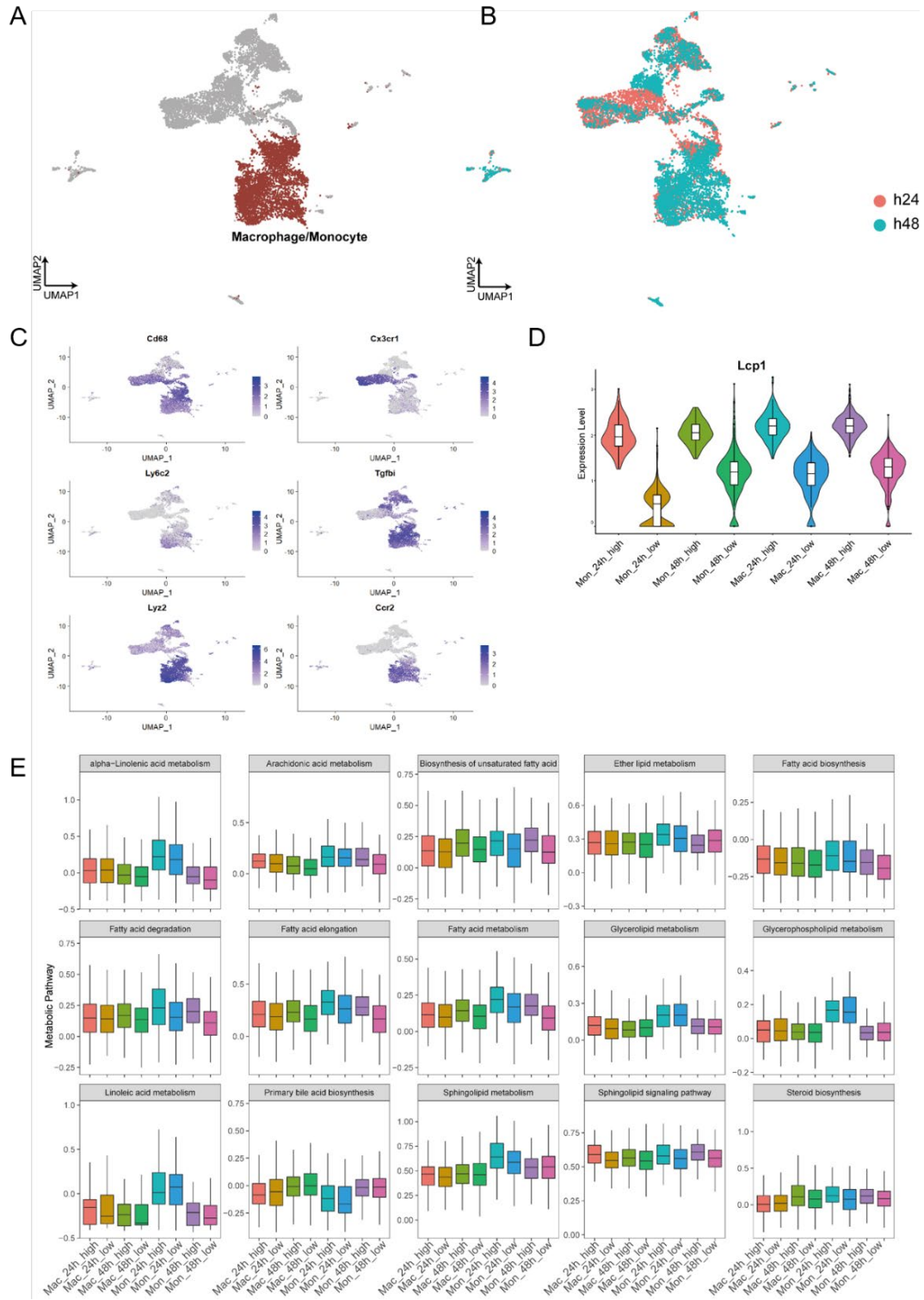


Figure S4. Heterogeneity in lipid metabolism of Lcp1<sup>high</sup> and Lcp1<sup>low</sup> macrophages and monocytes in post-stroke brains. (A-B) UMAP visualization illustrating clusters of cells isolated from ipsilateral (IL) hemispheres at 24 h and 48 h post-MCAo. (C) UMAP

representation highlighting specific markers for each identified cell cluster. (D) Categorization of Lcp1<sup>high</sup> and Lcp1<sup>low</sup> macrophages and monocytes at 24 h and 48 h post-tMCAO. (E) Box plots depicting expression levels related to lipid metabolism pathways in Lcp1<sup>high</sup> and Lcp1<sup>low</sup> macrophages and monocytes, in reference to Fig. 1D.