Figure S1. Suv39h1 inhibition aggravated hemin-induced ferroptosis in N2A cells.
(A) N2A cells were treated with Hemin, chaetocin, DFO and Fer-1 as indicated. The images show brightfield of cells under different treatments. **(B)** Lipid ROS that were assessed using BODIPY 581/591 C11 dye. Scale bar: 100 μm.
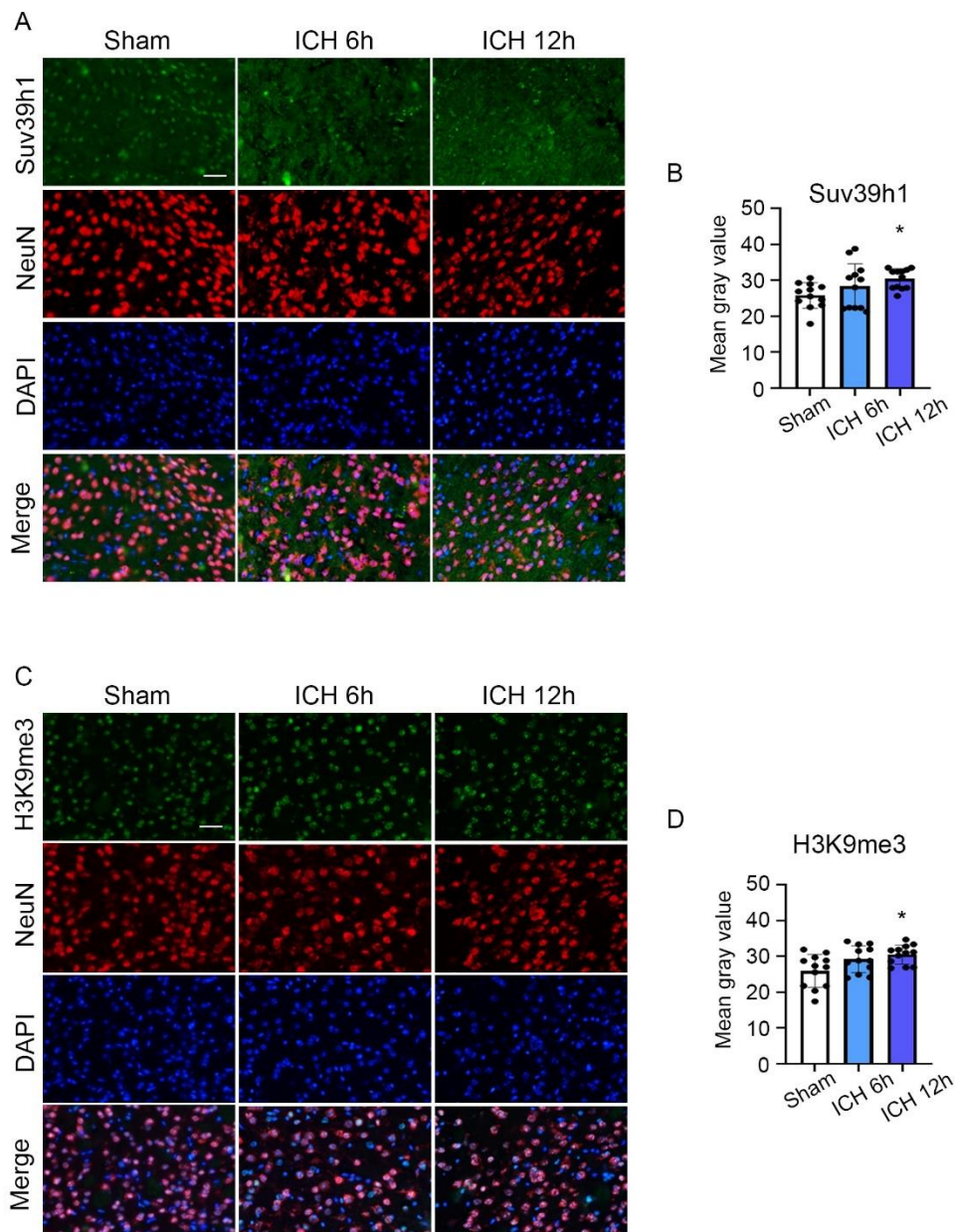
Figure S2. Alterations of Suv39h1 and H3K9me3 in ICH mice tissues at early stages. (A) Brain slices obtained at 6 and 12 hours post ICH were stained with anti-Suv39h1, NeuN and DAPI. (B) The mean fluorescence intensity of Suv39h1 in (A) was quantified. (C) Brain slices obtained at 6 and 12 hours post ICH were stained with anti-H3K9me3, NeuN and DAPI. (D) The mean fluorescence intensity of H3K9me3 in (C) was quantified. Results are shown as scatter plots (Mean±SD). n=12 images from 3 mice. Kruskal-Wallis test (B) or one-way ANOVA (D) followed by Tukey's or Dunn's multiple comparisons tests were employed. *$p<0.05$ vs Sham. Scale bar: (A, C) 75 μm.
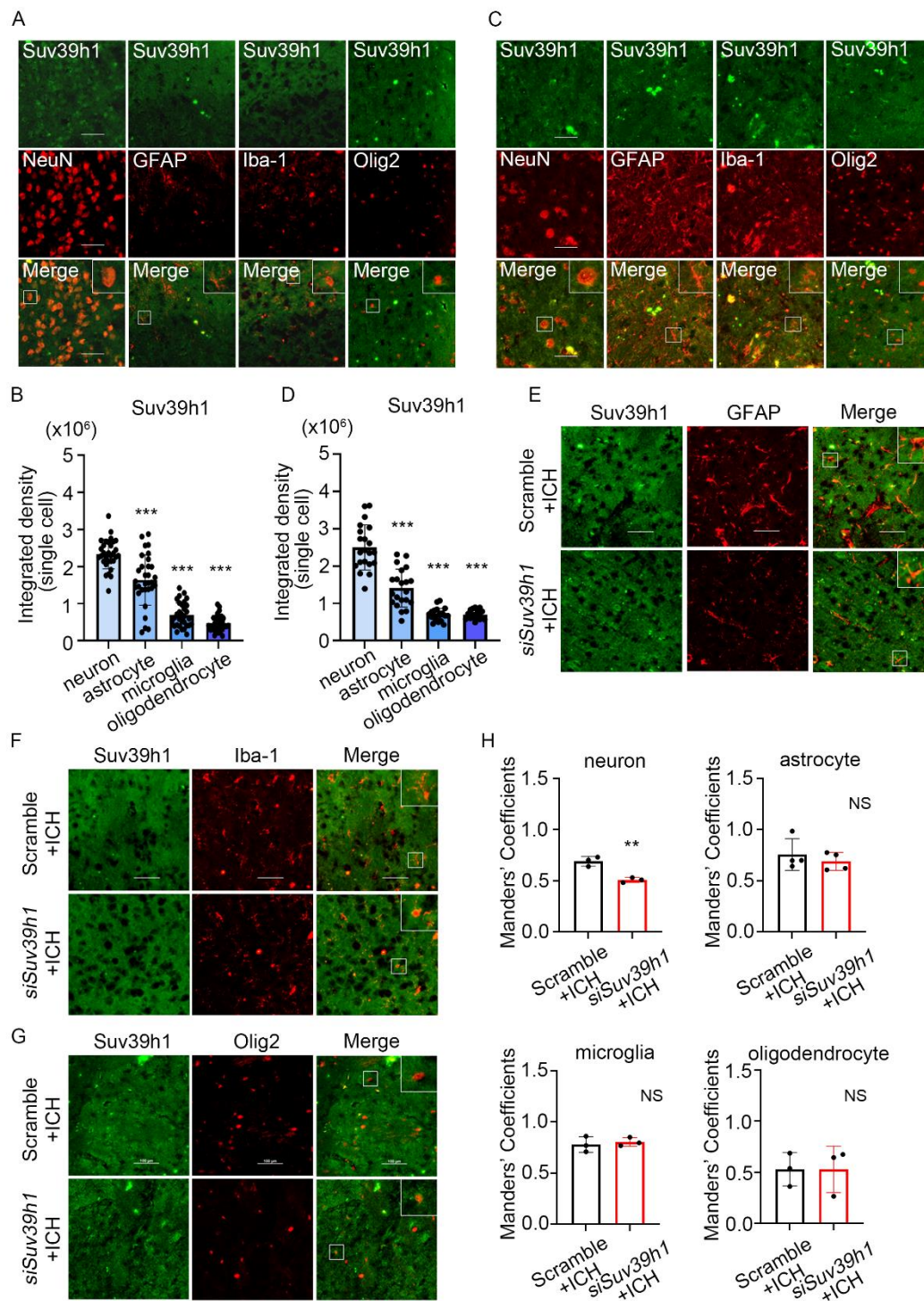
Figure S3. Expression alterations of Suv39h1 in different cell types. (A, B) Brain slices obtained at 3d post sham surgery were stained with anti-Suv39h1, NeuN, GFAP, Iba1 and Olig2 (A). The fluorescence intensity of Suv39h1 of NeuN+, GFAP+, Iba1+ or Olig2+ cells was quantified (B). **(C, D)** Brain slices obtained at 3d post ICH were stained with anti-Suv39h1, NeuN, GFAP, Iba1 and Olig2 (C). The fluorescence intensity of Suv39h1 of NeuN+, GFAP+, Iba1+ or Olig2+ cells was quantified (D). **(E-**

G) Immunostaining was performed using Suv39h1 and GFAP (E), Iba1 (F), or Olig2 (G) antibody at day 3 post ICH. **(H)** The Manders' Colocalization Coefficients (M1) between Suv39h1 and NeuN, GFAP, Iba1 or Olig2 were calculated. Results are shown as scatter plots (Mean±SD). n=31 cells (B), n=21 cells (D), n=3-4 images (H). One-way ANOVA followed by Tukey's or Dunn's multiple comparisons tests in (B, D) or two-tailed t test in (H) were employed. ** $p<0.01$ vs Scramble+ICH, ***$p<0.001$ vs neuron; NS, not significant. Scale bar: (A, C, E-G) 100 μm.