Figure S1. Hypercapnia decreased ZO-1 expression in the cerebrovascular endothelial cells of hypoxemic rats (n=4). Immunofluorescence images showing ZO-1 expression in the cerebrovascular endothelial cells. ZO-1 expression (red) was intensely labeled in CD31-positive cerebrovascular endothelial cells (green) in the (A-C) Sham group and the (D-F) hypercapnia group, but was markedly decreased in the (G-I) hypoxemia group. (J-L) Additionally, its expression was further decreased in the HH group compared with the hypoxemia group. Scale bars: 10 μm. HH, hypercapnia + hypoxemia; ZO-1, zonula occludens-1.

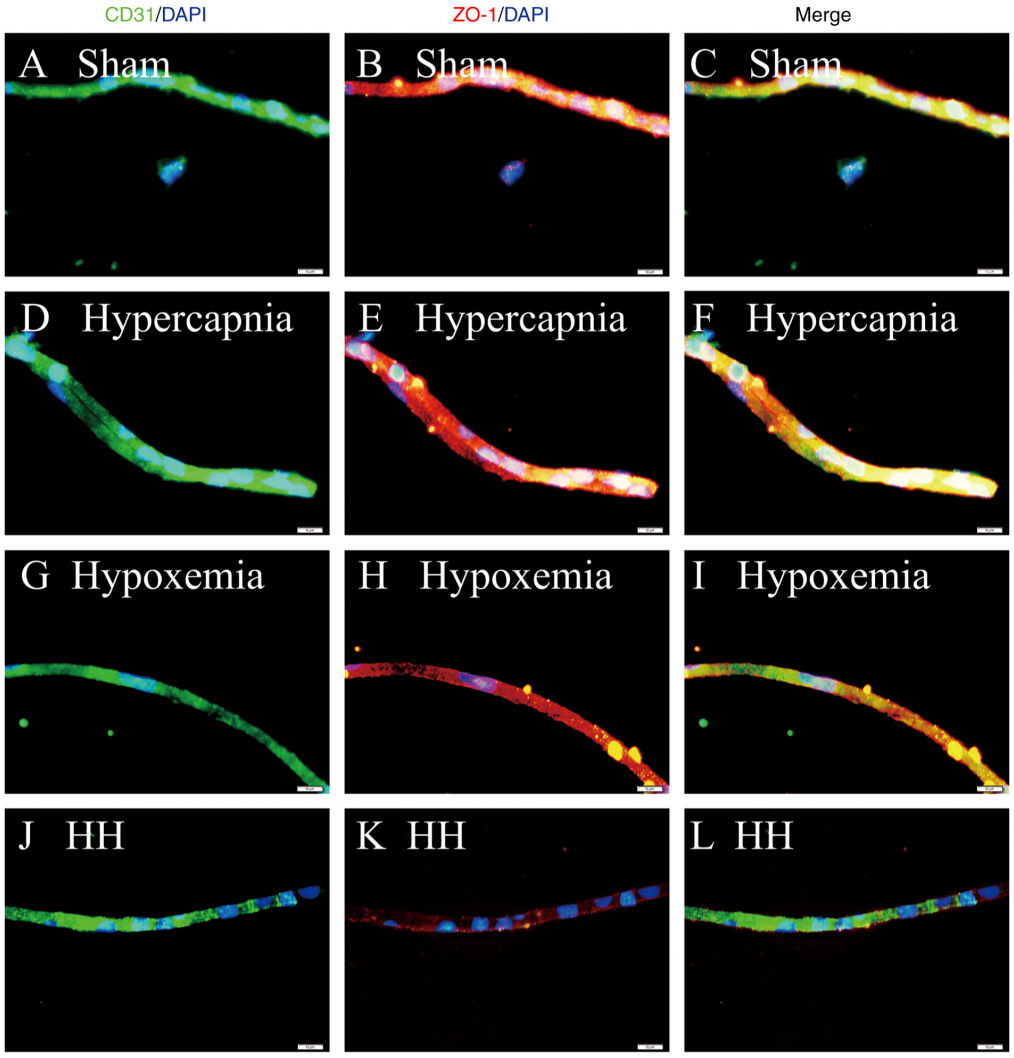

Figure S2. Hypercapnia decreased occludin expression in the cerebrovascular endothelial cells of hypoxemic rats (n=4). Immunofluorescence images showing occludin expression in the cerebrovascular endothelial cells. Occludin expression (red) was intensely labeled in CD31-positive cerebrovascular endothelial cells (green) in the (A-C) Sham group and the (D-F) hypercapnia group, but was markedly decreased in the (G-I) hypoxemia group. (J-L) Additionally, its expression was further decreased in the HH group compared with the hypoxemia group. Scale bars: 10 μm. HH, hypercapnia + hypoxemia.

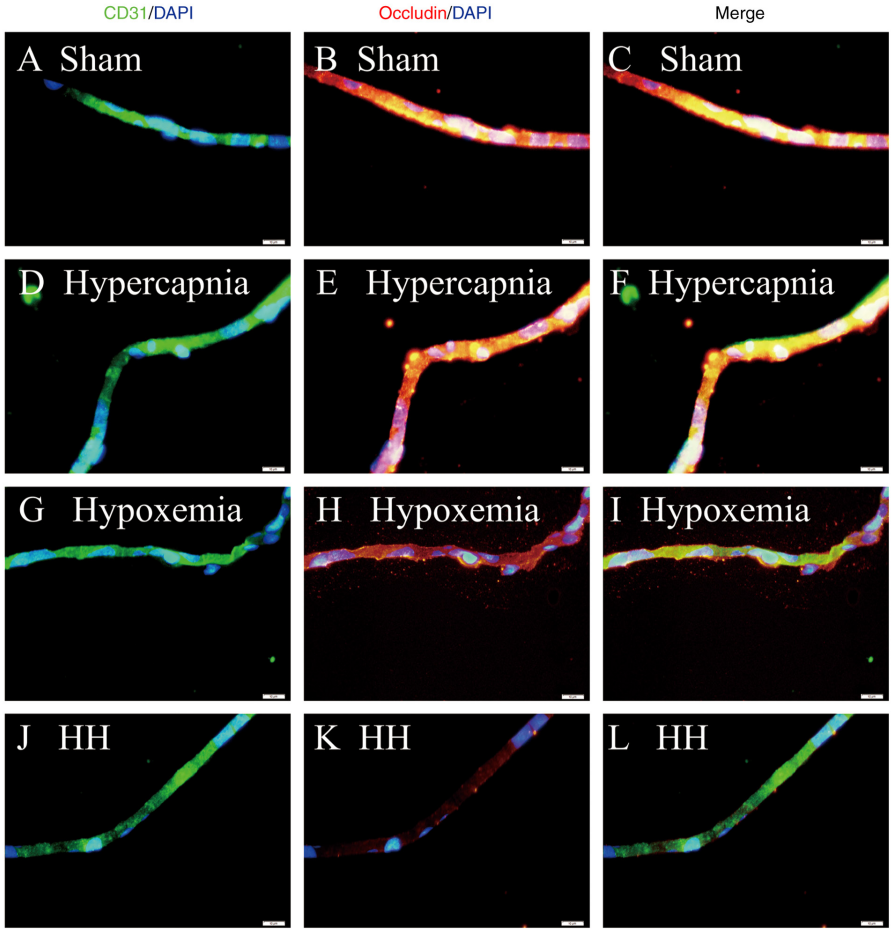

Figure S3. Hypercapnia decreased claudin-5 expression in the cerebrovascular endothelial cells of hypoxemic rats (n=4). Immunofluorescence images showing claudin-5 expression in the cerebrovascular endothelial cells. Claudin-5 expression (red) was intensely labeled in CD31-positive cerebrovascular endothelial cells (green) in the (A-C) Sham group and the (D-F) hypercapnia group, but was markedly decreased in the (G-I) hypoxemia group. (J-L) Additionally, its expression was further decreased in the HH group compared with the hypoxemia group. Scale bars: 10 μm. HH, hypercapnia + hypoxemia.

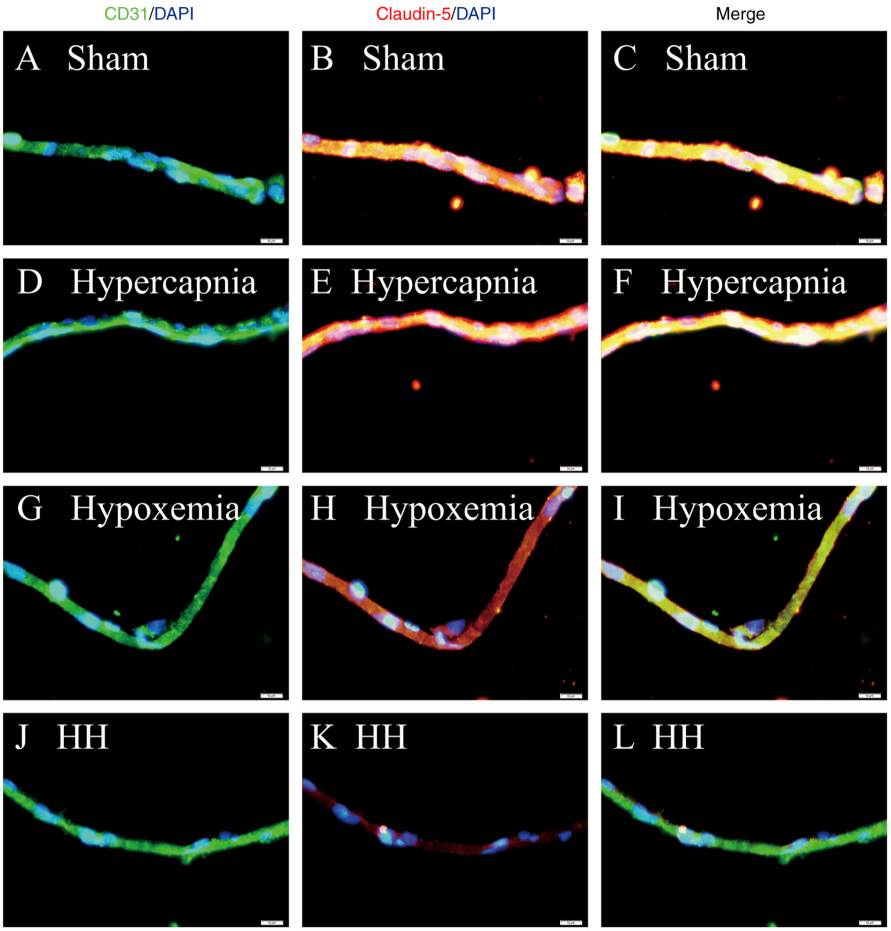

Figure S4. IL-1β treatment decreased the expression of ZO-1 in RBECs (n=4). Immunofluorescence images showing ZO-1 expression in RBECs. ZO-1 expression (red) was intensely labeled in CD31-positive RBECs (green) in the (A-C) control group, but was markedly decreased in the (D-F) IL-1β group. Additionally, its expression was significantly upregulated in the (G-I) IL-1β + IL-1Ra group compared with the (D-F) IL-1β group; however, compared with the (A-C) control group, its expression was not statistically significantly different in the (J-L) IL-1Ra group. Scale bars: 10 μm. RBECs, rat brain capillary endothelial cells; IL-1β, interleukin-1β; IL-1Ra, interleukin-1 receptor antagonist; ZO-1, zonula occludens-1.

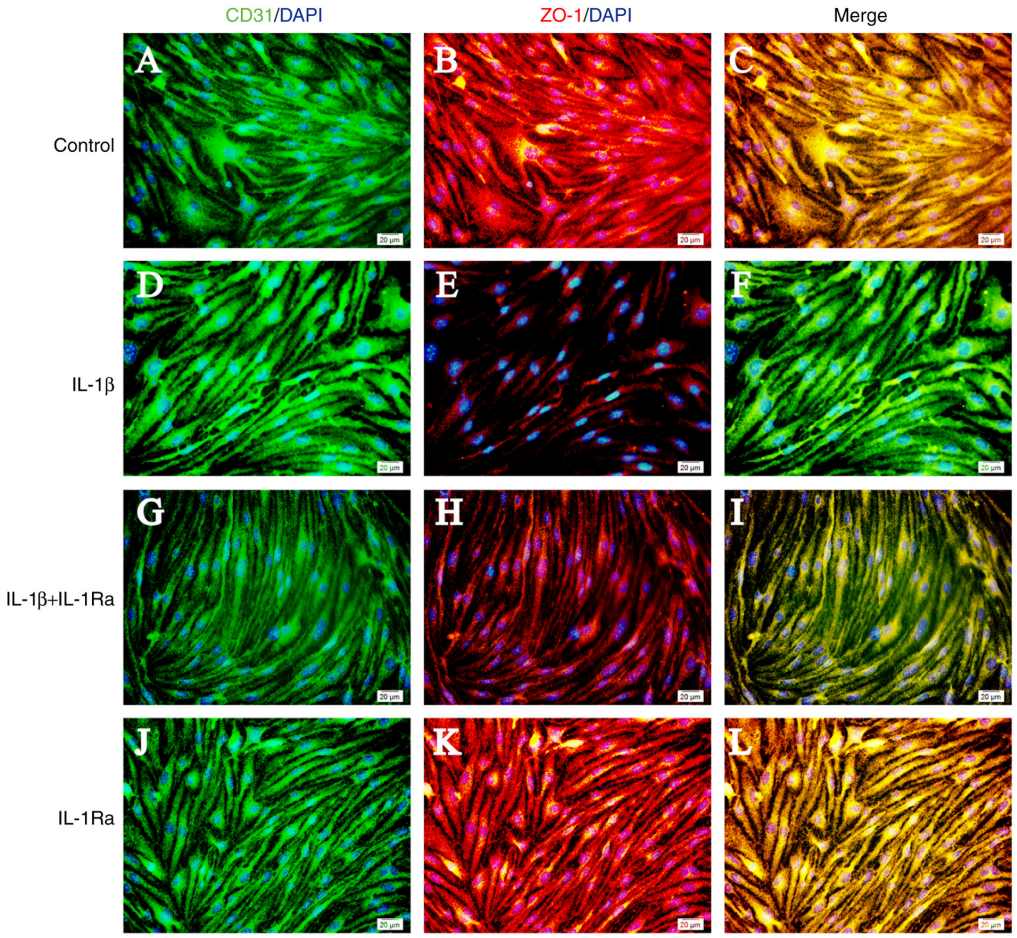

Figure S5. IL-1β treatment decreased the expression of occludin in RBECs (n=4). Immunofluorescence images showing occludin expression in RBECs. Occludin expression (red) was intensely labeled in CD31-positive RBECs (green) in the (A-C) control group, but was markedly decreased in the (D-F) IL-1β group. Additionally, its expression was significantly upregulated in the (G-I) IL-1β + IL-1Ra group compared with the (D-F) IL-1β group; however, compared with the (A-C) control group, its expression was not statistically significantly different in the (J-L) IL-1Ra group. Scale bars: 10 μm. RBECs, rat brain capillary endothelial cells; IL-1β, interleukin-1β; IL-1Ra, interleukin-1 receptor antagonist.

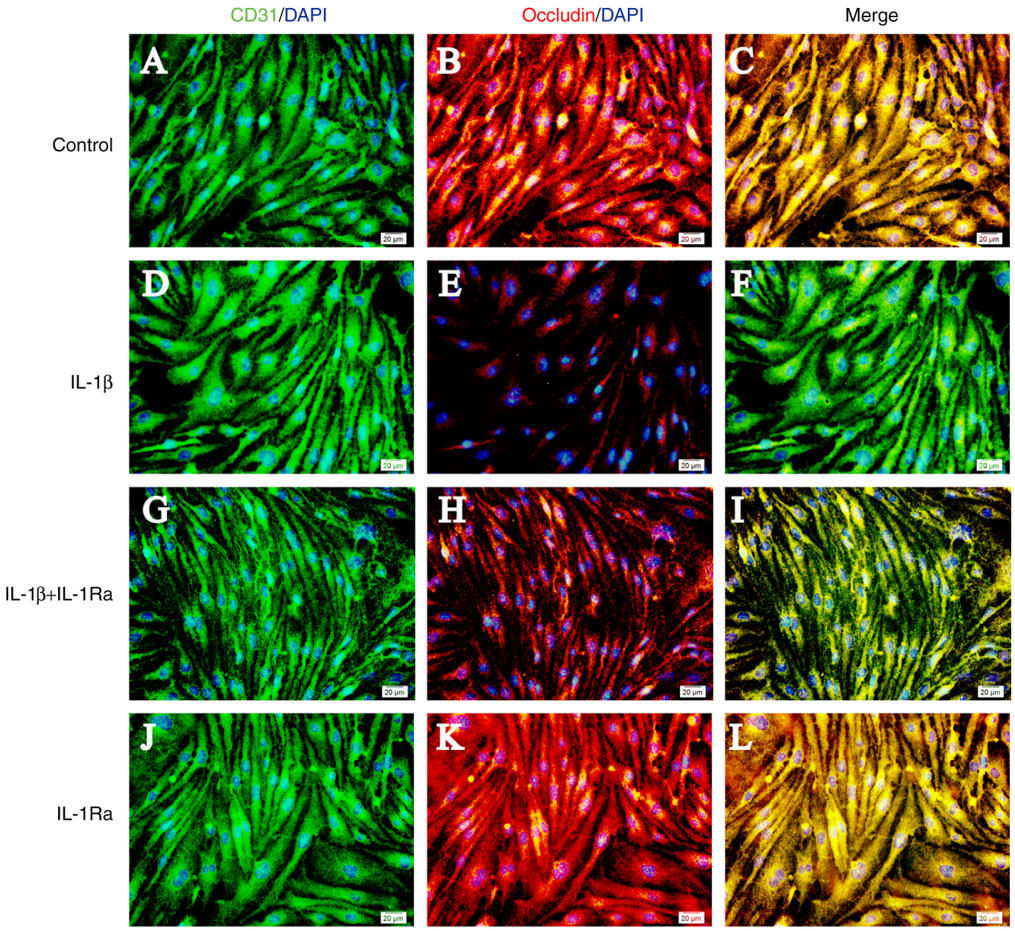

Figure S6. IL-1β treatment decreased the expression of claudin-5 in RBECs (n=4). Immunofluorescence images showing claudin-5 expression in RBECs. Claudin-5 expression (red) was intensely labeled in CD31-positive RBECs (green) in the (A-C) control group, but was markedly decreased in the (D-F) IL-1β group. Additionally, its expression was significantly upregulated in the (G-I) IL-1β + IL-1Ra group compared with the (D-F) IL-1β group; however, compared with the (A-C) control group, its expression was not statistically significantly different in the (J-L) IL-1Ra group. Scale bars: 10 μm. RBECs, rat brain capillary endothelial cells; IL-1β, interleukin-1β; IL-1Ra, interleukin-1 receptor antagonist.