Supplementary Material For

## Photoacoustic microscopy reveals the hemodynamic basis of sphingosine 1-phosphate-induced neuroprotection against ischemic stroke

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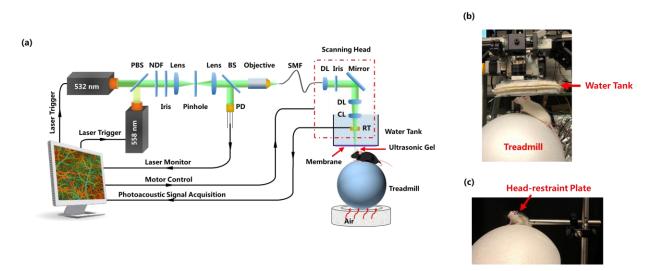
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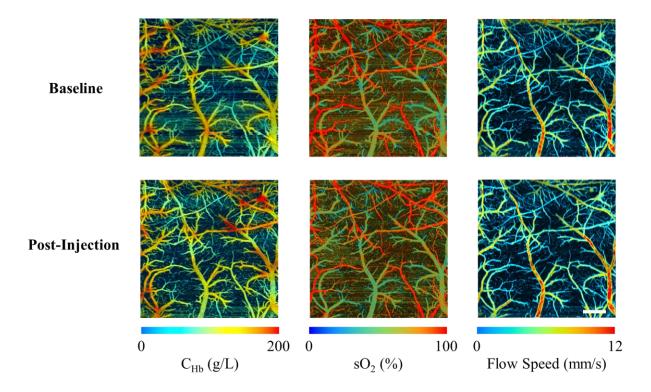
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**Figure S1.** (a) Schematic of the head-restrained multi-parametric photoacoustic microscopy. PBS, polarizing beam splitter; NDF, neutral-density filter; BS, beam sampler; PD, photodiode; SMF, single-mode fiber; DL, doublets; CL, correction lens; RT, ring transducer. (b), (c) Photos of a head-restrained mouse.



**Figure S2.** Images of  $C_{Hb}$ , sO<sub>2</sub> and blood flow speed in the awake mouse brain acquired before and after the injection of "active" compound SLM6031434 under normoxia. Scale bar, 500  $\mu$ m.