

## Supporting Information

### Biocompatible AIE Dots with Red Emission for *In Vivo* Three-Photon Brain Vascular Imaging

Hequn Zhang<sup>a</sup>, Nuernisha Alifu<sup>a</sup>, Tao Jiang<sup>b</sup>, Yalun Wang<sup>a</sup>, Jianli Hua<sup>\*b</sup>, Jun Qian<sup>\*a</sup>

<sup>a</sup>State Key Laboratory of Modern Optical Instrumentations, Centre for Optical and Electromagnetic Research, College of Optical Science and Engineering, Zhejiang University, Hangzhou 310058, China

<sup>b</sup>Key Laboratory for Advanced Materials, Institute of Fine Chemicals, Department of Chemistry, East China University of Science and Technology, Shanghai, 200237, China.

\*E-mail: qianjun@zju.edu.cn, jlhua@ecust.edu.cn

#### 1. Supporting Figures

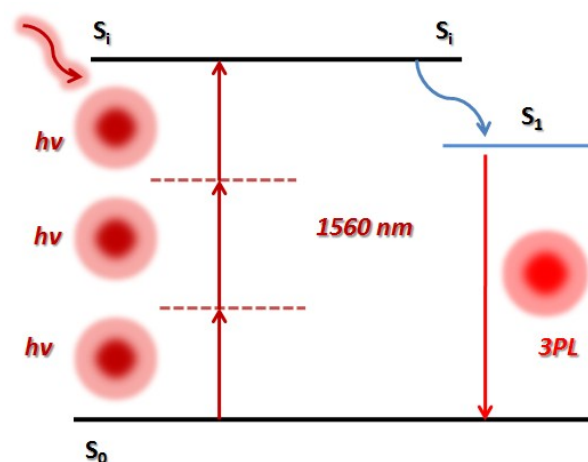


Fig. S1 Energy transition diagrams describing three-photon excited fluorescence.

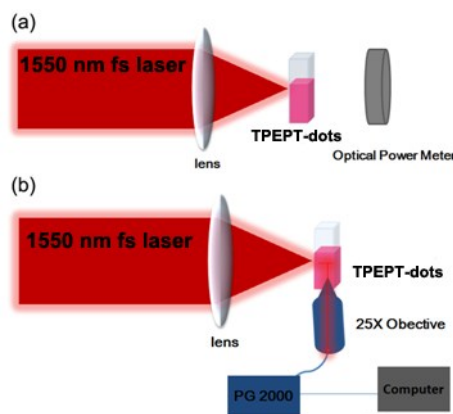
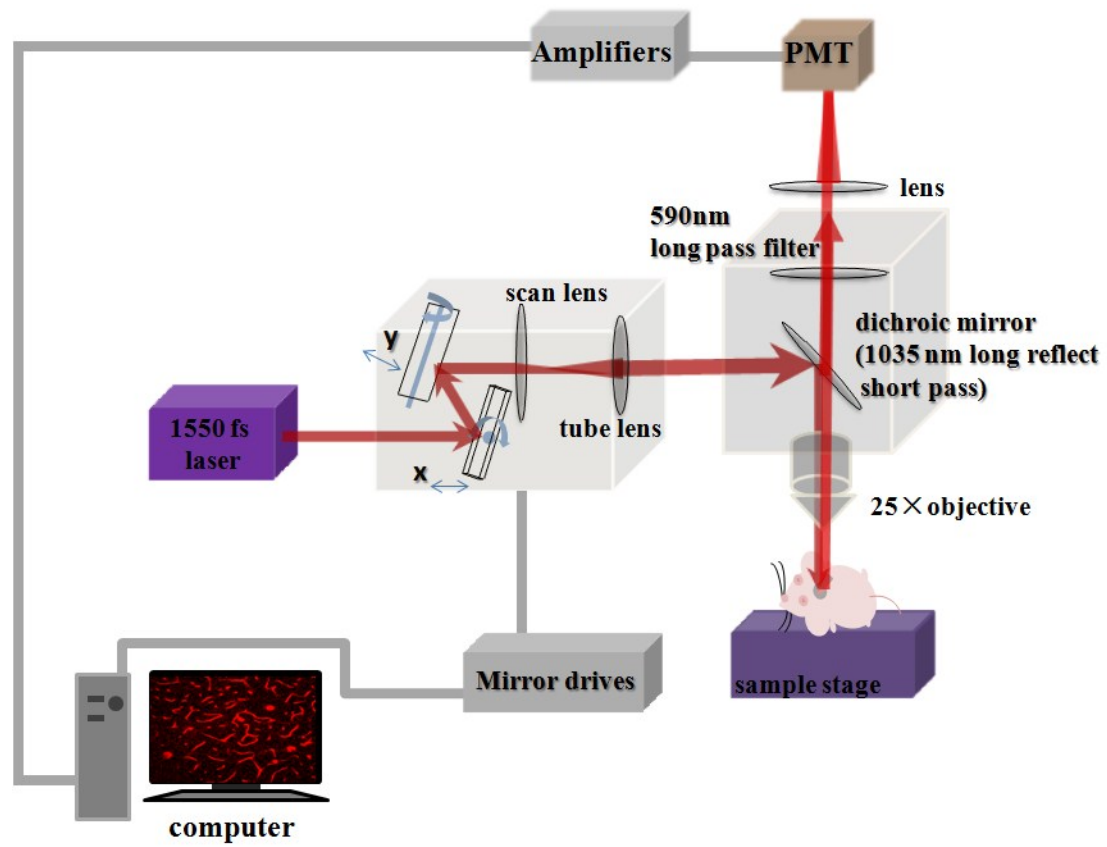


Fig. S2 Schematic illustration of the setup for (a) three-photon absorption cross-section measurements and (b) three-photon fluorescence measurements.



**Fig. S3** Schematic illustration of the upright three-photon scanning fluorescence microscope.