Supporting Information

*for*

**Endoplasmic reticulum-targetable selenium-doped carbon nanodots with redox-responsive fluorescence for in situ free-radical scavenging in cells and mice**

Lei Yang 1, Hong Huang 3, Ting Wang 1, Danling Zhou 1, \*, Qing Chen 2, Dan Li 2, Shuzi Chen 2, Ping Lin 2, \*

1 School of Health & Social Care, Shanghai Urban Construction Vocational College, Shanghai, 201415, China

*2 Clinical laboratory, Shanghai Mental Health Center, Shanghai, 200030, China*

3 College of Biological Chemical Sciences and Engineering, Jiaxing University, Jiaxing 314001, China.

\*Corresponding author: zhoudanling510@163.com (D.L. Zhou); linpingsun2000@aliyun.com (P. Lin).

图表, 折线图

描述已自动生成

**Figure S1** FTIR spectra of (a) Se-CDs, (b) MOA, and (c) ER-Se-CDs.

图表

描述已自动生成

**Figure S2** Absorption spectrum of Se-CDs.

表格

中度可信度描述已自动生成

**Figure S3** Synthesis route of MOA.

图示

低可信度描述已自动生成

**Figure S4** 1H NMR spectrum of MOA in CDCl3.

图表

描述已自动生成

**Figure S5** 13C NMR spectrum of MOA in CDCl3.

散点图

描述已自动生成

**Figure S6** HRMS data of MOA.

图表, 直方图

描述已自动生成

**Figure S7** Hydrodynamic size of (A) Se-CDs and (B) ER-Se-CDs determined by DLS.

图表, 直方图

描述已自动生成

**Figure S8** (A) TEM image of ER-Se-CDs. (B) The corresponding size distribution.

图表, 折线图

描述已自动生成

**Figure S9** Fluorescence spectra of Se-CDs and ER-Se-CDs.



**Figure S10** Co-localization investigations in living astrocytes that were co-labeled with ER-Se-CDs (20 μg mL-1) and ER-Tracker Red (50 nM): (A) fluorescence image from ER-Se-CDs (λem = 410-480 nm, λex = 405 nm); (B) fluorescence image from ER-Tracker Red (λem = 570-650 nm, λex = 552 nm); (C) the merged image of (A) and (B); (D) the bright field image; (E) the corresponding intensity correlation plot of the blue channel with red channel; (F) intensity profiles of ER-Se-CDsand ER-Tracker Red along the line across the cell. Scale bar: 25 μm.

图片包含 图表

描述已自动生成

**Figure S11** H&E stained histological images of main organs (heart, liver, spleen, lung, and kidney) from mice intravenously treated with PBS (1.0 mM, 100 μL) versus ER-Se-CDs (80 μg mL-1, 100 μL) after 7 days.