Electronic Supplementary Material (ESI) for RSC Advances. This journal is © The Royal Society of Chemistry 2022

Supporting Information

Folic Acid Functionalized Aggregation-induced Emission Nanoparticles for Tumor Cells Targeted Imaging and Photodynamic Therapy †

Danning Wen,‡^a Xueyun Zhang,‡^a Lei Ding,^a Huan Wen,^b Wen Liu,^{a,b*} Chengwu Zhang,^b Bin Wang,^{b*} Lihong Li,^{a,b} and Haipeng Diao^{a,b*}

^aDepartment of Biochemistry and Molecular Biology, Shanxi Medical University, Taiyuan 030001, P.R. China. E-mail: liuwen@sxmu.edu.cn, diaohp@sxmu.edu.cn

^bCollege of Basic Medical Sciences, Shanxi Medical University, Taiyuan 030001, P.R. China. E-mail: wangbin@sxmu.edu.cn

 $[\]ensuremath{\ddagger}$ The authors contributed equally to this work.

Figure S1 The synthetic route of M1.

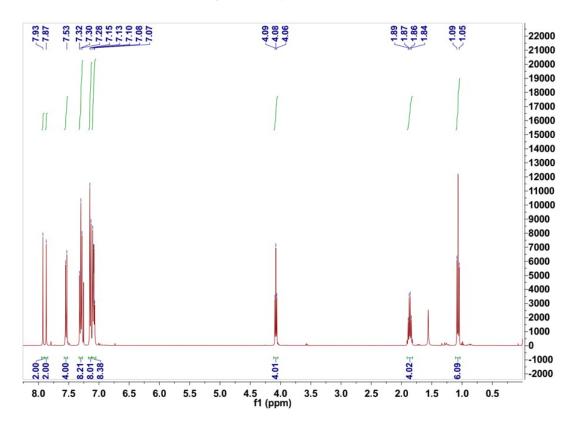


Figure S2 The 1H NMR spectra of M1 in CDCl₃.

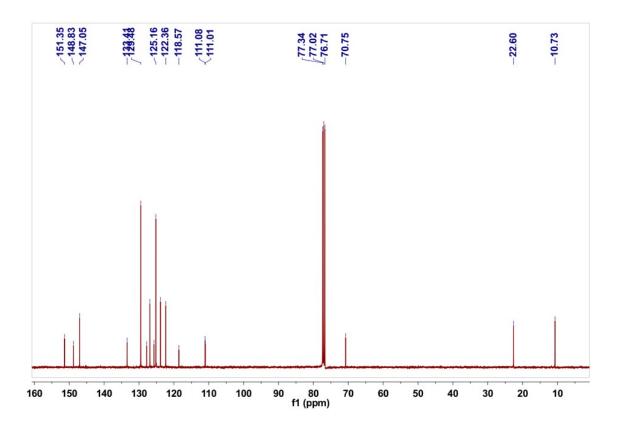


Figure S3 The ¹³C NMR spectra of M1 in CDCl₃.

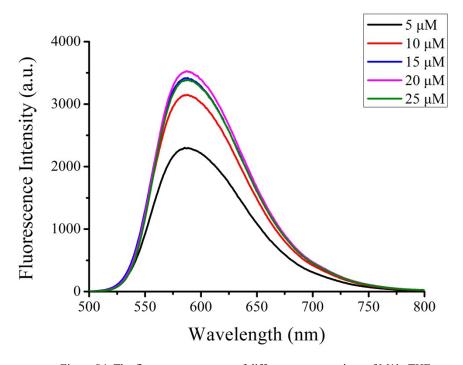


Figure S4. The fluorescence spectra of different concentrations of M1 in THF.

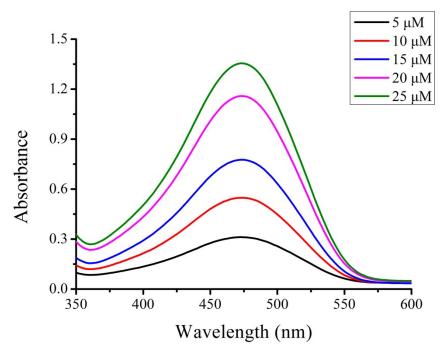


Figure S5. The UV absorption spectra of different concentrations of M1 in THF.

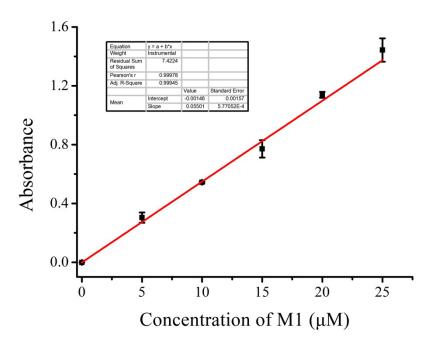


Figure S6 The standard curve of M1.

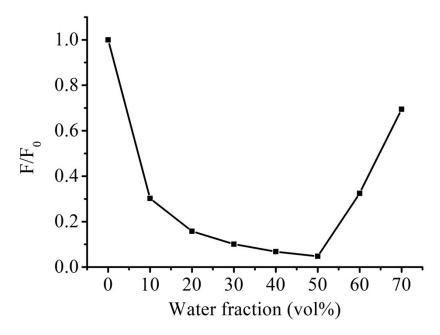


Figure S7. Curves of relative FL intensity (F/F_0) of M1 versus H_2O fraction.

Fluorescent substance	Absorbance	Integral area	Fitting slope	Relative Fluorescence Quantum Yield
Rhodamine 6G	0.0090	13050.44	1000000	0.98
	0.0190	17437.04		
	0.0289	34477.35		
	0.0372	41620.18		
	0.0482	47939.13		
M1	0.0098	7661.91	758859	0.73
	0.0198	16845.47		
	0.0298	21399.36		
	0.0384	31758.20		
	0.0496	35571.32		
FFM1	0.0089	4285.25	426106	0.43
	0.0181	8570.76		
	0.0280	14207.85		
	0.0387	16162.29		
	0.0490	19430.68		

Table S1. Fluorescence quantum yields of Rhodamine 6G, M1and FFM1.

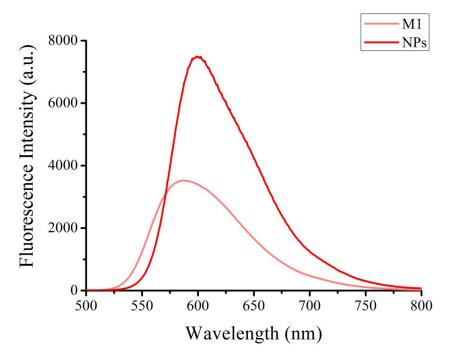


Figure S8 The fluorescence spectra of M1 and FFM1 NPs.

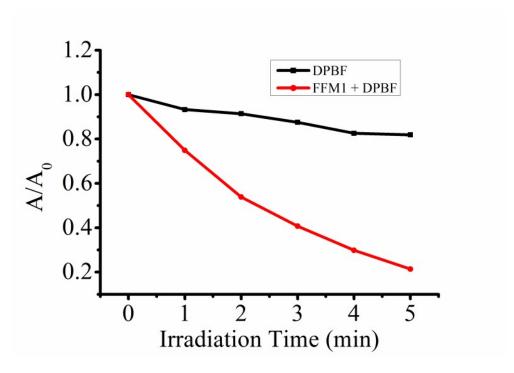
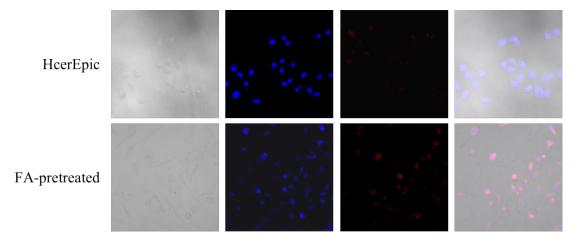


Figure S9. ROS generation type of FFM1 (1.0 μM) upon exposure to white light using DPBF (60 μM) as an indicator.



 $Figure\ S10.\ CLSM\ image\ of\ HcerEpic\ and\ HeLa\ cells\ \ (FA\ with/without)\ \ were\ incubated\ with\ FFM1\ for\ 6\ h.$

Scale bar: 50 µm.

FM1

Figure S11. CLSM image of HeLa cells were incubated with FM1 and FFM1 for 6 h. Scale bar: $50~\mu m$.

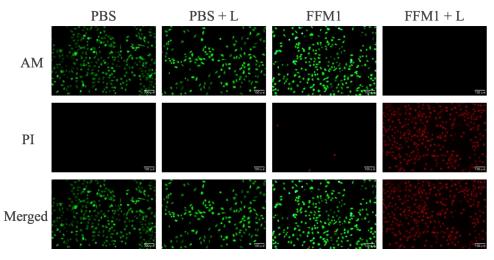


Figure S12. Live/Dead staining assay of HeLa cells after various treatments. Scale bar: 100 $\mu m.$