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Covalent RGD-Graphene-Phthalocyanine Nanocomposite for Fluorescence Imaging-Guided Dual Active/Passive Tumor Targeted Combinatorial Phototherapy

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Synthesis of SiPc-NH_2.[1] Silicon phthalocyanine dichloride ($SiPcCl_2$) (0.327 mM), 2-(2-aminoethoxy)ethanol (16.4 mM), K_2CO_3 (3.62 mM), and pyridine (3 mL) were dissolved in 40 mL of dry toluene. The mixture was stirred at 130°C for 15 h under nitrogen flow. After the mixture was evaporated on a rotary evaporator, it was redissolved in chloroform and filtered (150 mL). The filtrate was washed three times with deionized water. Then the crude product was recrystallized from chloroform/n-hexane to obtain SiPc-NH_2 as a green solid. ^{1}H NMR (CD_3OD, 300 MHz): δ −1.87 (4H, t, J = 3.4 Hz, CH_2), 0.54 (4H, t, J = 3.6 Hz, CH_2), 1.72 (4H, t, J = 3.6 Hz, CH_2), 1.81 (4H, t, J = 3.8 Hz, CH_2), 8.43−8.46 (8H, m, Pc-H), 9.68−9.70 (8H, m, Pc-H).

1. J. Pan, A. Ouyang, W. Fang, G. Cheng, W. Liu, F. Wang, D. Zhao, K. Le and J. Jiang, *J Mater Chem B*, 2020, **8**, 2895-2908.