Supplementary Information (SI) for Journal of Materials Chemistry C.

Rare-earth doped upconversion-photopolymerization hydrogel hybrids for *in vivo* wound healing

Ximei An[b], Ling Gao[c*], Jingrui Guo[b], Fan Meng[b], Huiwang Lian[b], Shaoan Zhang[d], Janak L. Pathak[e], Yang Li[a,d,f*], Shizhen Zhang[a*]

a Department of Neurosurgery and Neurosurgical Disease Research Centre, the Second Affiliated Hospital of Guangzhou Medical University, Guangzhou, 510006, China.

b School of Biomedical Engineering, Guangzhou Medical University, Guangzhou, 510006, China.

c Department of Health Ward, Guangzhou Institute of Cancer Research, the Affiliated Cancer Hospital, Guangzhou Medical University, Guangzhou 510095, China.

d Institute of Light+X Science and Technology, Faculty of Electrical Engineering and Computer Science, Ningbo University, Ningbo, 315211, China.

e School and Hospital of Stomatology, Guangdong Engineering Research Center of Oral Restoration and Reconstruction, Guangzhou Key Laboratory of Basic and Applied Research of Oral Regenerative Medicine, Guangzhou Medical University, Guangzhou 510182, China.

f The Sixth School of Clinical Medicine, the Affiliated Qingyuan Hospital, Guangzhou Medical University, Qingyuan, 511518, China.

Corresponding authors

E-mai:
lychris@sina.com
gl_0626@139.com
zhangshizhen2024@yeah.net

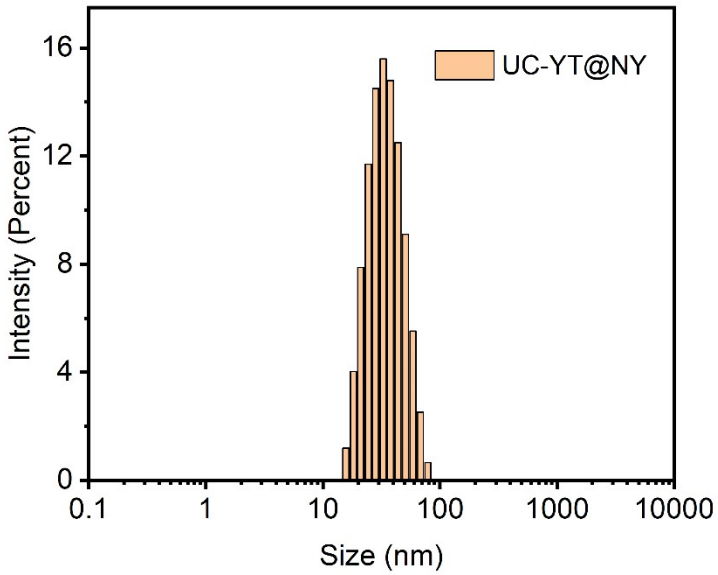

Fig S1 The average particle size of upconverted nanoparticles $NaYF_4$: Yb^{3+},Tm^{3+}@$NaYF_4$:Nd^{3+},Yb^{3+} (UC-YT@NY).

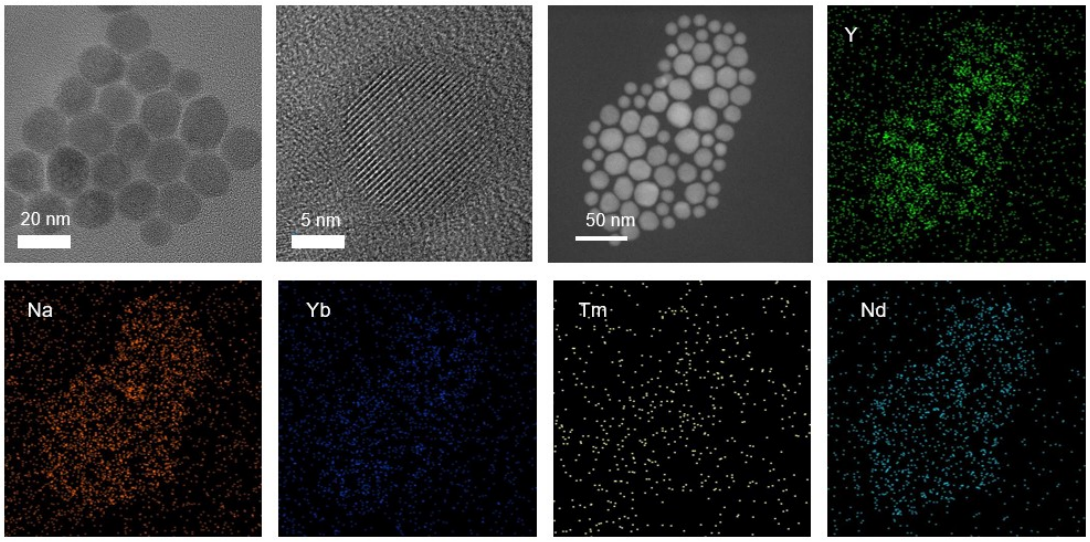

Fig.S2 HRTEM images of UC-YT@NY and a large view of the area image of upconversion nanocrystals.

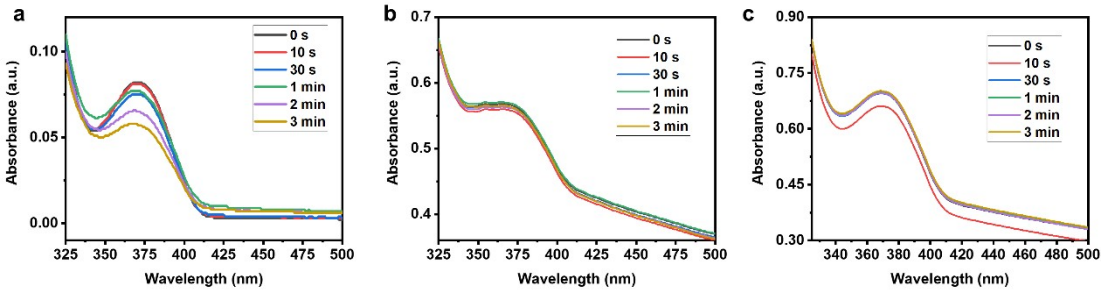

Fig. S3 (a-c) Absorption spectra of water-soluble photoinitiator LAP at 365 nm, 808 nm and 980 nm laser irradiation for different times.

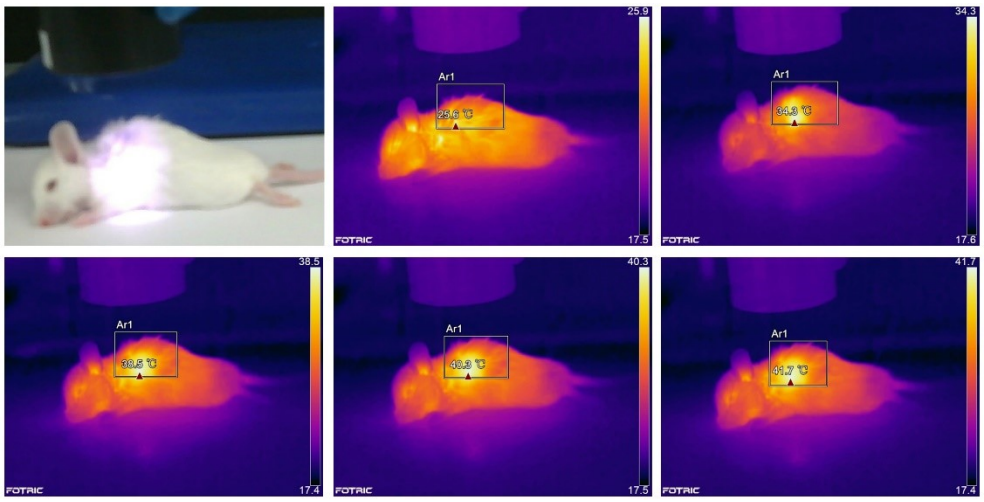

Fig. S4 The wound was irradiated with near-infrared light at a wavelength of 808 nm.

The temperature of the mice was maintained within a reasonable range using an 808 nm power of 1.27 W/cm^2. The FOTRIC 280 thermal imager was used to measure the temperature.

Table S1 Comparison of several types of epidermal wound repair.

Excitation Wavelength	Wound Healing (%)	Ref.
UV, 365 nm	7 day (>60%)	1
UV, 365 nm	30 day (84%)	2
UV, 365 nm	7 day (61.65%),14 day (93.42%)	3
NIR, 980 nm	14 day Essentially healed	4
NIR, 800 nm	7 day (81%), Synergistic with pH	5
NIR, 808 nm	14 day (88.2%)	This work

Reference

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