Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Two-dimensional peptide nanosheets functionalized with gold nanorods for photothermal therapy of tumor

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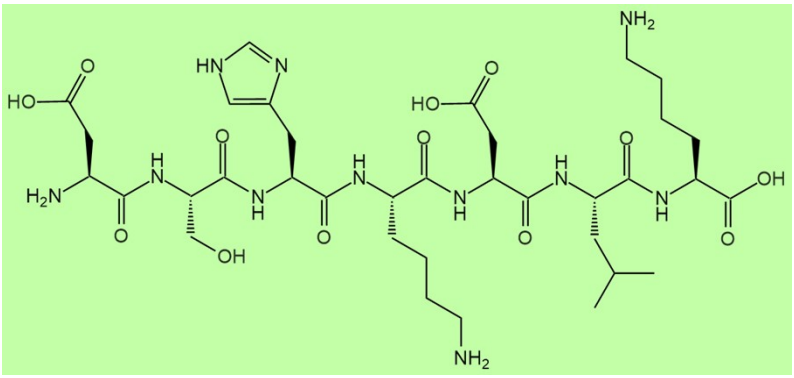

Fig. S1 Molecular structural formula of peptide molecules with sequence DSHKDLK.

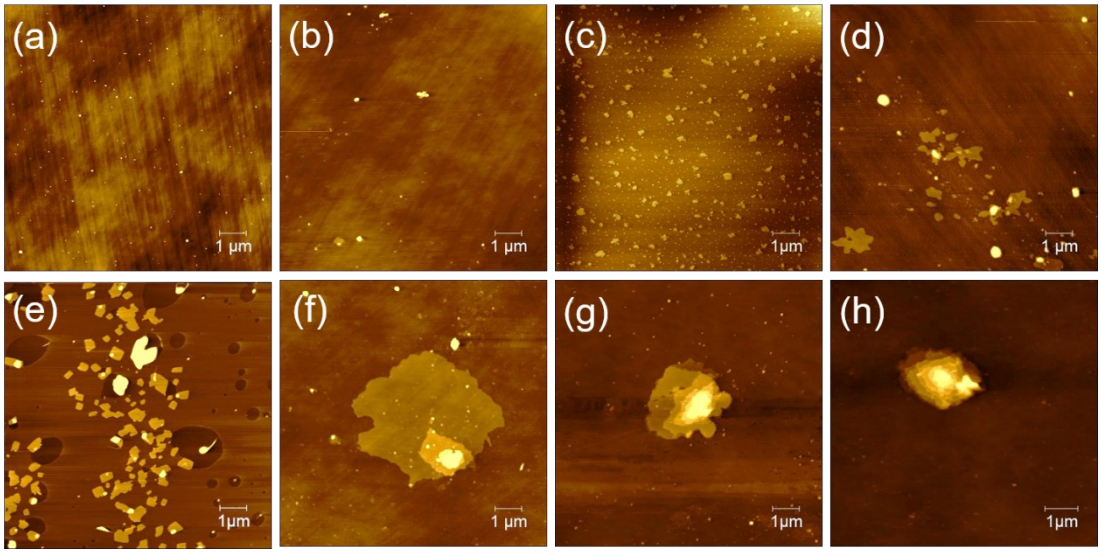

Fig. S2 AFM images showing DSHKDLK peptide self-assembled morphology changes over time: (a) 1 h; (b) 3 h; (c) 6 h; (d) 9 h; (e) 12 h; (f) 24 h; (g) 48 h; (h) 72 h.

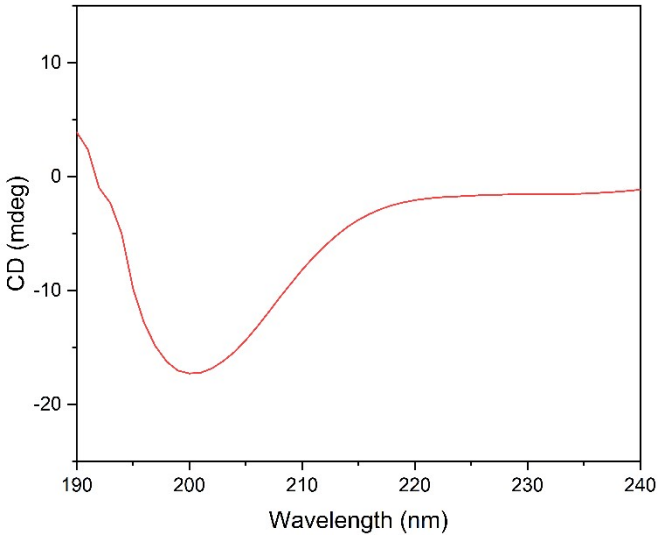

Fig. S3 Schematic illustration of the growth of self-assembled DSHKDLK PNSs.

Table S1. Secondary structure contents of DSHKDLK.

Result	Helix1	Helix2	Strand1	Strand2	Turns	Unordered	Total
1	0.0%	6.7%	25.0%	13.1%	22.8%	32.4%	100.0%
2	0.3%	3.8%	29.0%	14.8%	21.1%	31.0%	100.0%

The secondary structure contents are analyzed from CD spectra using the Dichro Web.

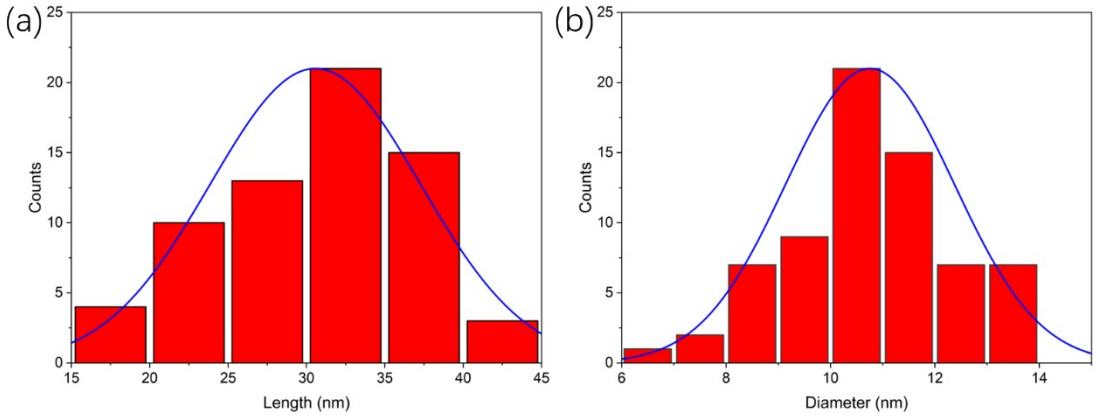

Fig. S4 Statiscal analysis of (a) the length and (b) the diameter of AuNRs.

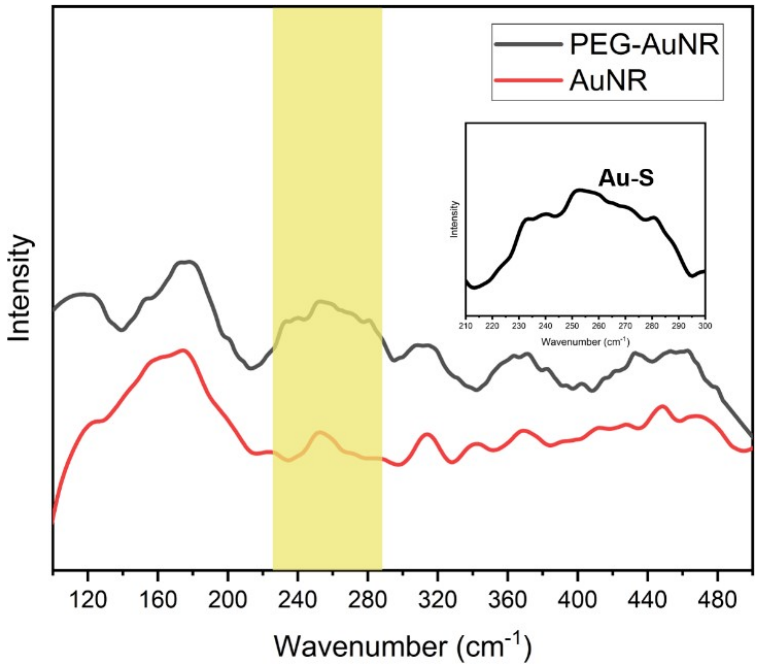

Fig. S5 Raman spectra of AuNRs and PEG-AuNRs.

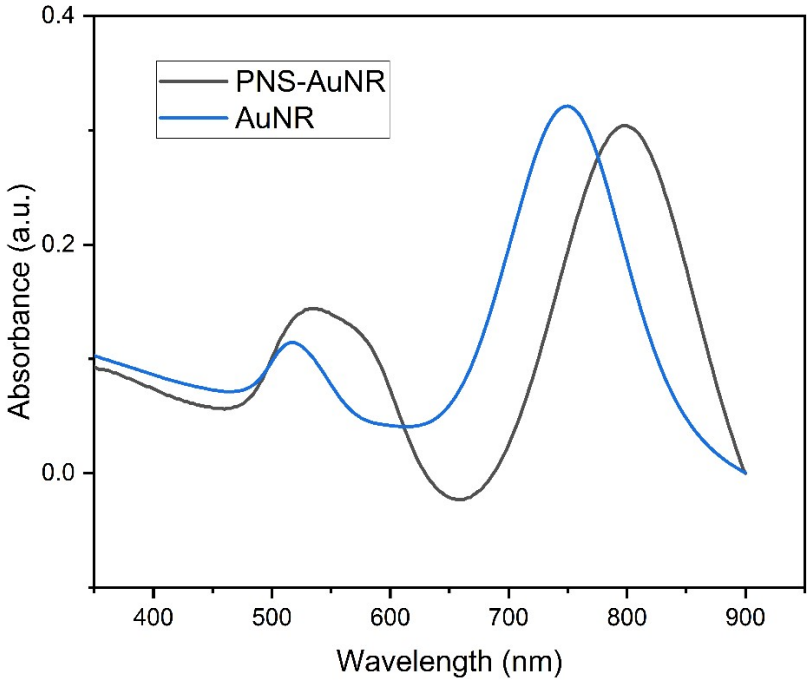

Fig. S6 UV-vis absorption spectra of AuNRs and PNS-AuNRs.

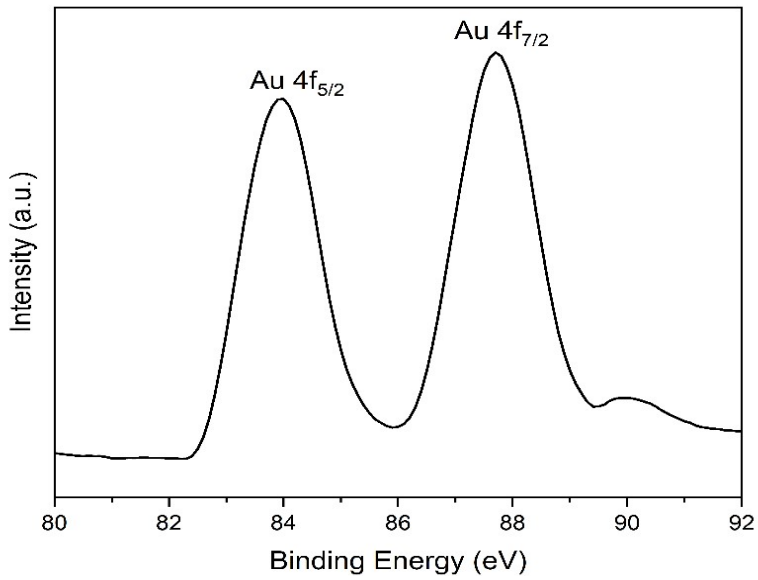

Fig. S7 High-resolution XPS spectrum of Au 4f.

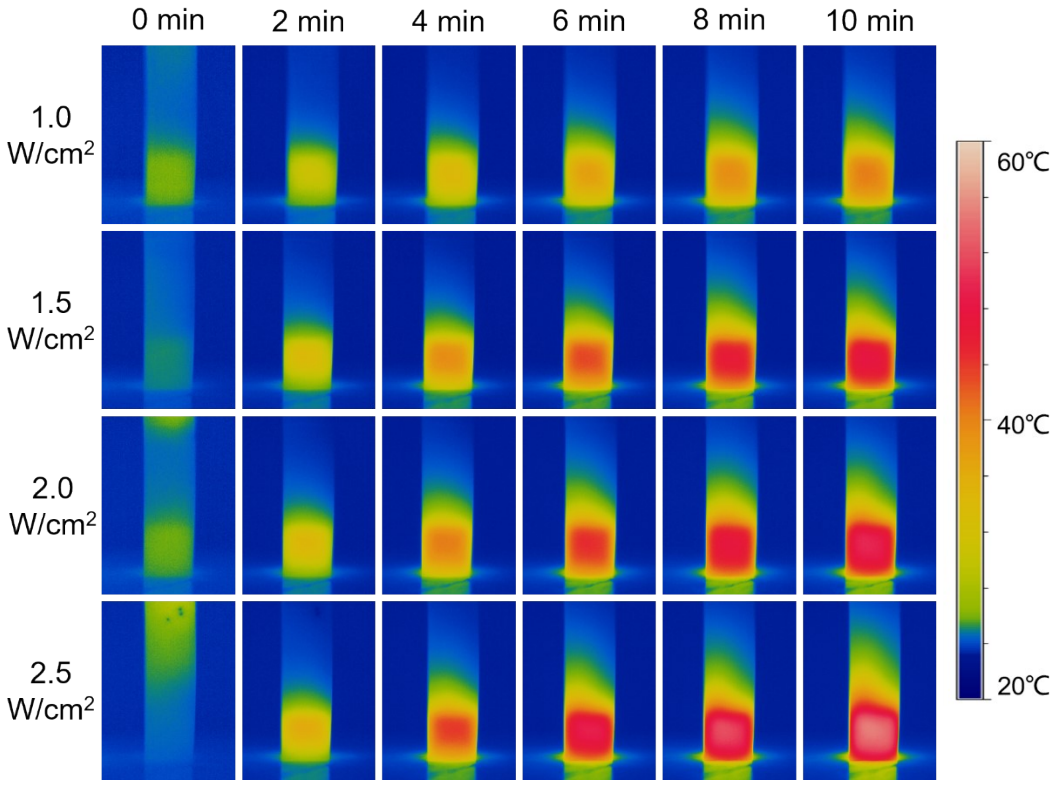

Fig. S8 The real-time temperature changes of the PNS-AuNRs under different irradiation power at 100 μg mL^{-1}.

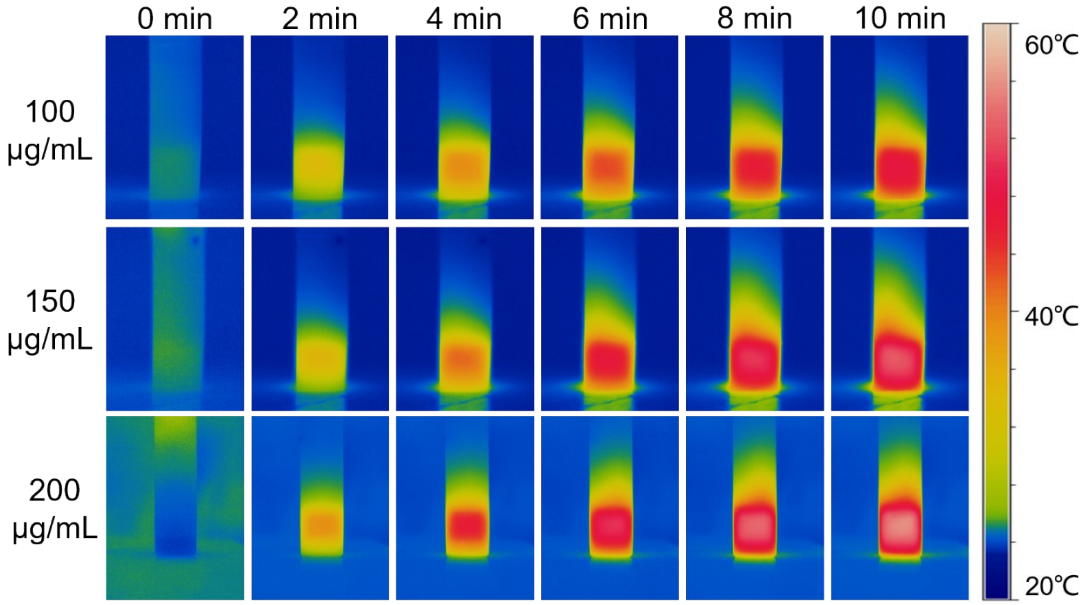

Fig. S9 The real-time temperature changes of the PNS-AuNRs with different concentrations at 1.5 W cm^{-2} irradiation power.

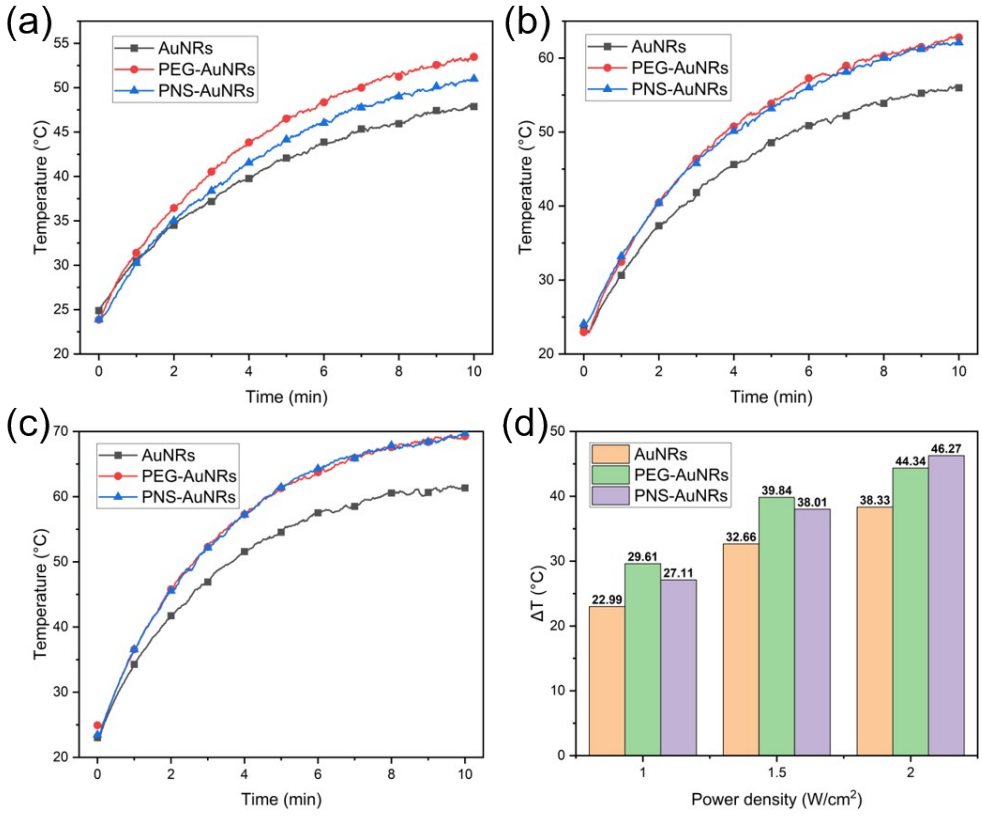

Fig. S10 Photothermal curves of AuNRs, PEG-AuNRs, and PNS-AuNRs (at the same Au concentration) under 1 (a), 1.5 (b), and 2 (c) W cm^{-2} irradiation power; (d) The 10 min temperature change of AuNRs, PEG-AuNRs, and PNS-AuNRs (at the same Au concentration) under different irradiation power.

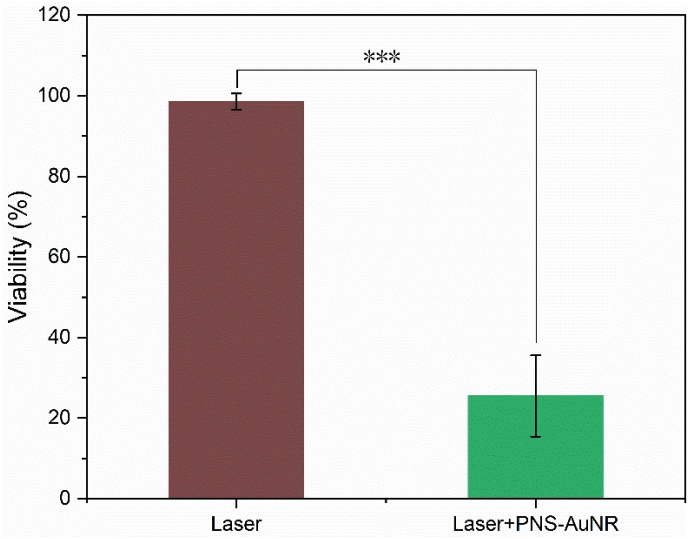

Fig. S11 Viability of MCF-7 cells treated with or without 100 μg mL^{-1} PNS-AuNRs and 808 nm laser irradiation at 1.5 W cm^{-2} for 10 min. Data are expressed as the mean ± standard (n = 3). Statistically significant differences were evaluated using the Student's t -test (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns > 0.05).