

Electronic Supplementary Information

Liquid exfoliation of molybdenum metallenes for non-inflammatory photothermal therapy of tumors

Chenxin Lu,^{‡a} Xiang Huang,^{‡a} Zhaoying Jin,^a Junwei Deng,^a Zhengbao Zha,^{*a} and Zhaohua Miao^{*a}

^a*School of Food and Biological Engineering, Hefei University of Technology, Hefei 230009, China*

[‡]*These authors contributed equally: Chenxin Lu, Xiang Huang*

^{*}*Corresponding author. E-mail: zhaohua_miao@hfut.edu.cn, zbzha@hfut.edu.cn*

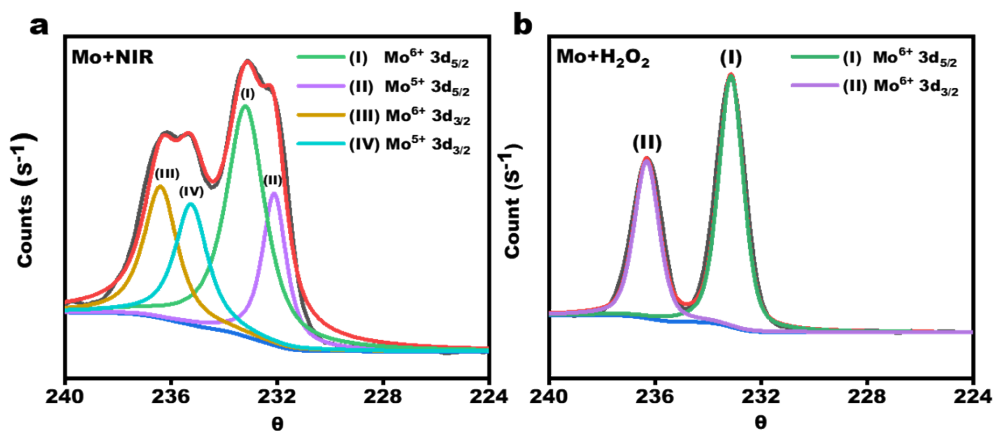


Fig. S1. *In vitro* Mo metallene valence change detection. (a) XPS curves of Mo metallene after NIR irradiation. (b) XPS curves of Mo metallene after incubation with H₂O₂.

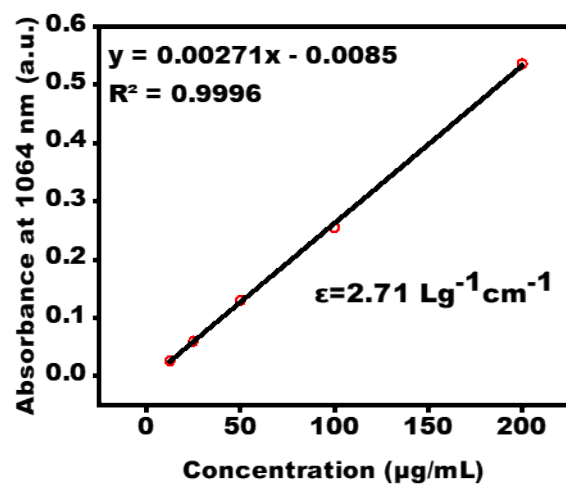


Fig. S2. Vis-NIR absorption standard curve at 1064 nm.

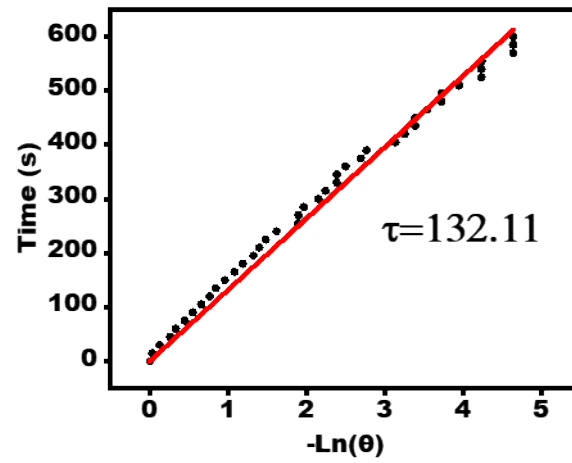


Fig. S3. The linear curve fitting of photothermal conversion efficiency of Mo metallenes.

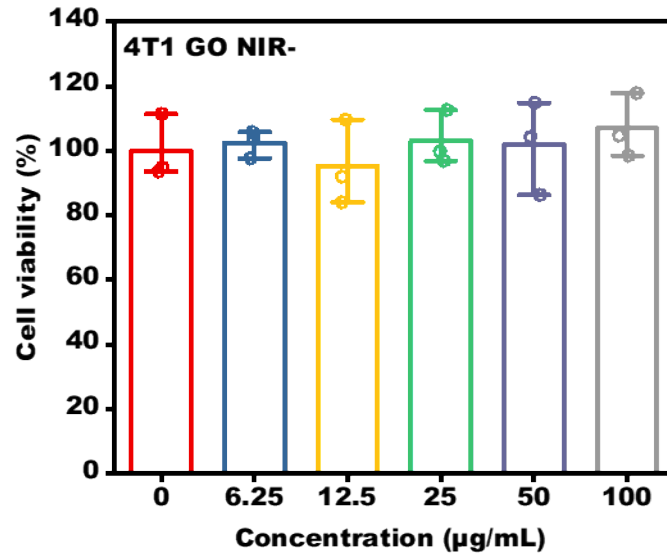


Fig. S4. MTT of 4T1 with different concentration of GO *in vitro*.

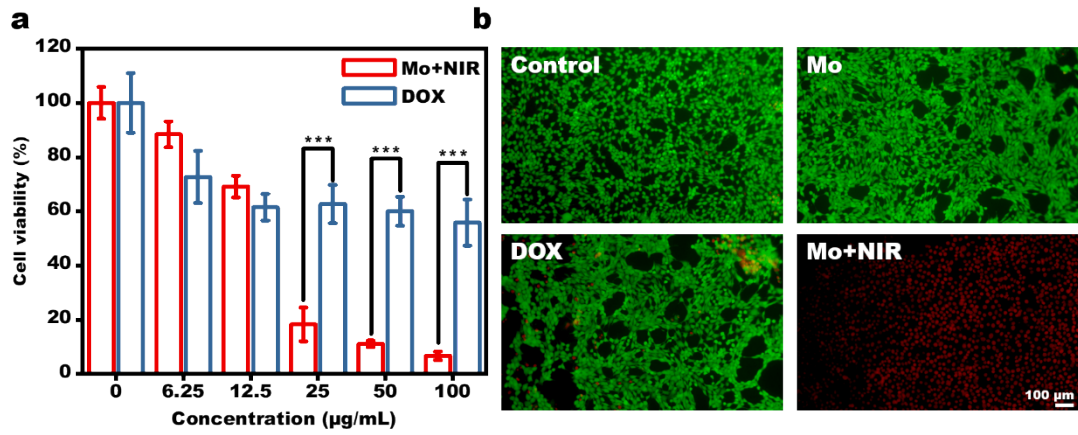


Fig. S5. Comparison of antitumor effects of different concentrations of Mo metallenes and DOX. (a) 4T1 cell viability treated with Mo metallene + NIR and DOX. (b) Dead/alive staining of 4T1 cells treated with Mo metallene + NIR and DOX.

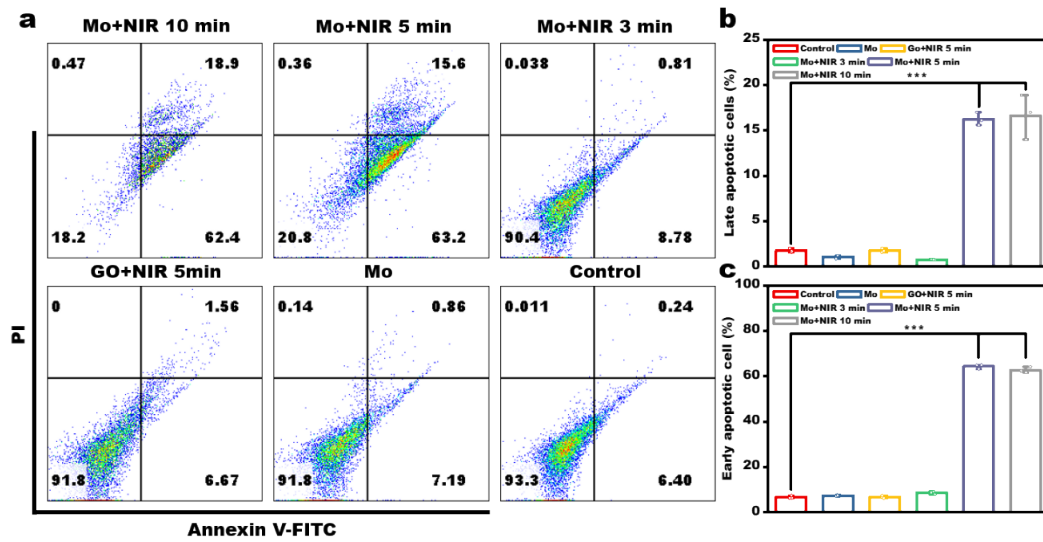


Fig. S6. (a) Apoptosis of 4T1 cells after different treatments detected by flow cytometry. (b) The ratio of 4T1 late apoptotic or necrosis cells derived from quantitative analysis of flow cytometry data. (c) The ratio of 4T1 apoptotic cells derived from quantitative analysis of flow cytometry data.

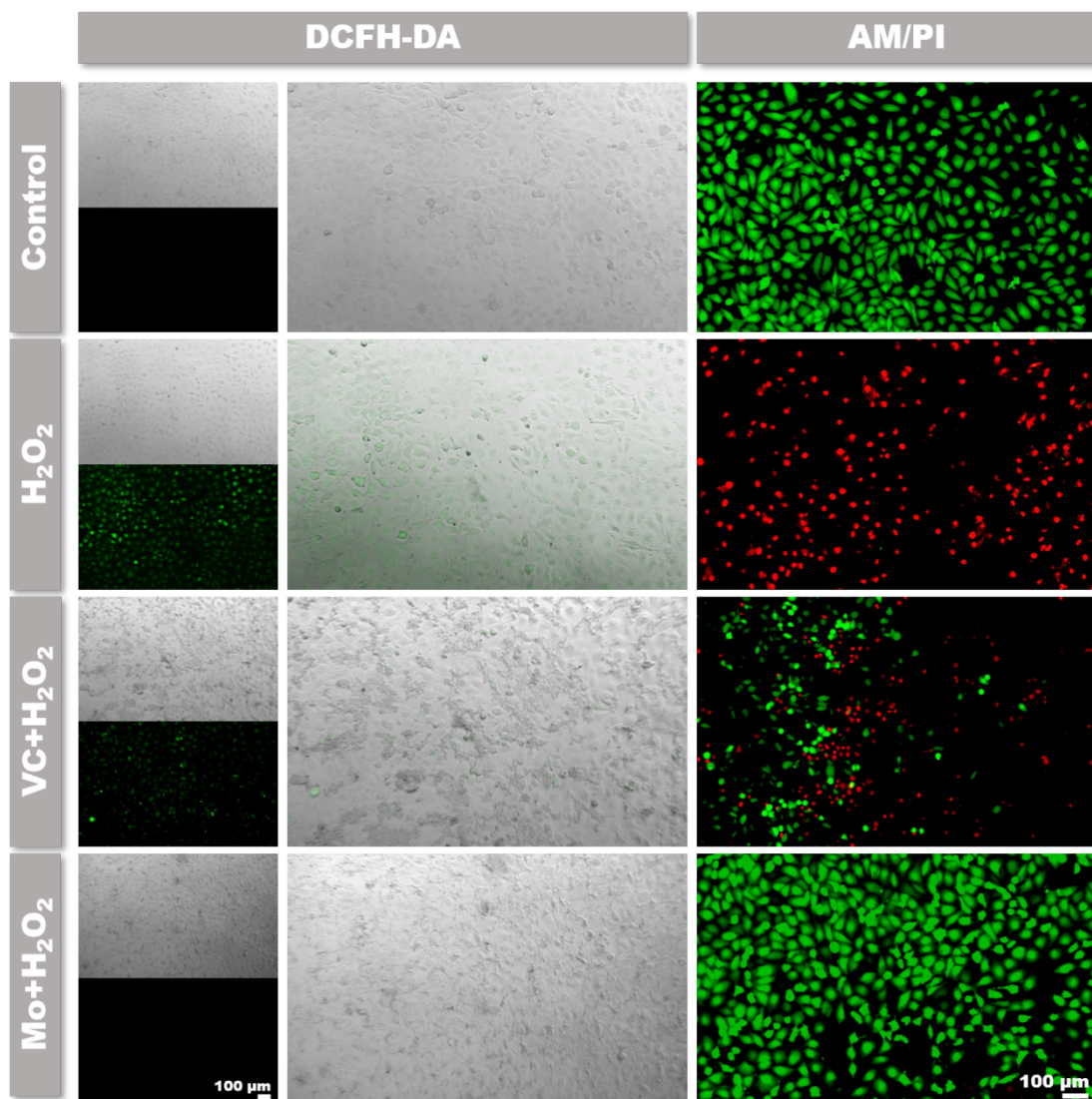


Fig. S7. Images of DCFH-DA and dead/live staining of different treatments incubated with HUVEC cells. Scale bar :100 μm .

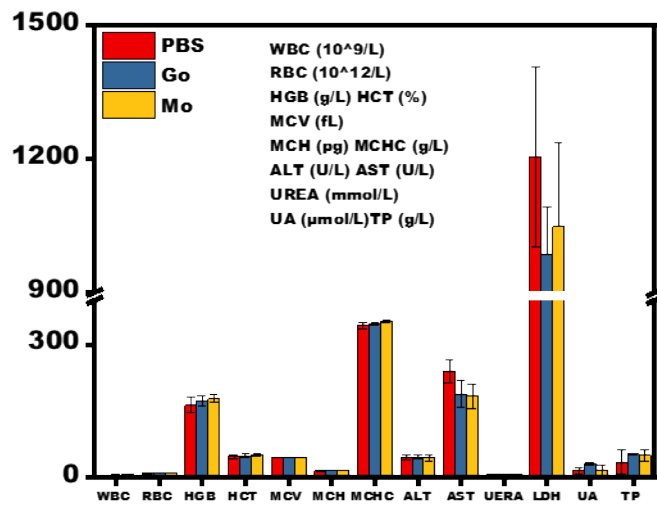


Fig. S8. Blood biochemistry analysis and blood routine examination of mice after 14 days of treatment.

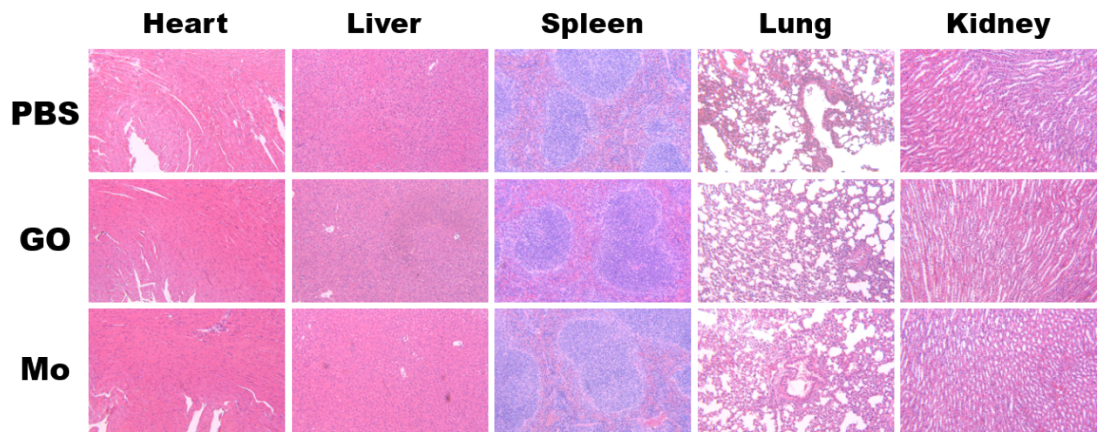


Fig. S9 H&E staining images of major organs after different treatments.

Table S1. Comparison of metallic materials for photothermal therapy of tumors.

Materials	PTCE	Dose	Metabolism	Reference
Gold nanorod	21%	1 mg mL ⁻¹	Non-degradability	[S1]
PVP-Bi Nanodots	30%	20 mg kg ⁻¹	Clearance through the liver after 7 days	[S2]
PEG-In nanoparticles	41.3%	4 mg mL ⁻¹	--	[S3]
PdMo bimetalene	69.15%	40 mg kg ⁻¹	48 h clearance in liver and spleen	[S4]
SnNSs@PEG	48.6%	1mg kg ⁻¹	clearance in liver and spleen	[S5]
Mo metallene	23.01%	100 µg mL ⁻¹ ,	--	This work

References

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