

Supporting Information

Photoelectrons Mediating Angiogenesis and Immunotherapy through Heterojunction Film for Noninvasive Disinfection

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Table S1. The detail information in blood routine examination at 1 D.

parameter	Ti+L	GO/NCDs/Hap/Ti+L	GO/NCDs/Ti+L	unit
RBC	6.231	15.083	19.706	10 ¹² /L
HGB	113.0	292.2	378.0	g/l
HCT	39.2	94.7	121.7	%
MCV	65.1	64.6	60.5	fl
MCH	21.7	23.2	21.8	pg
MCHC	312.0	333.7	336.0	g/l
RDW	11.5	11.3	11.1	%
PLT	617.0	969.6	1057.7	10 ⁹ /L
MPV	4.7	5.9	5.4	fl
PDW	15.2	14.6	14.3	%
PCT	0.243	0.795	0.618	%

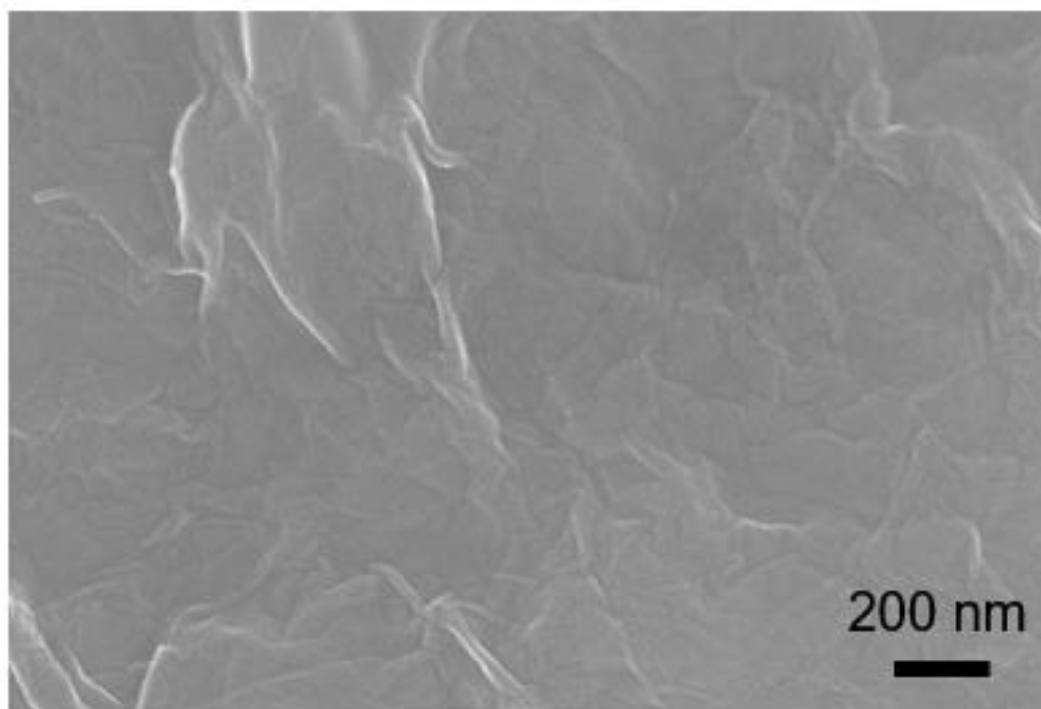


Figure S1. The SEM of GO/NCDs/Ti.

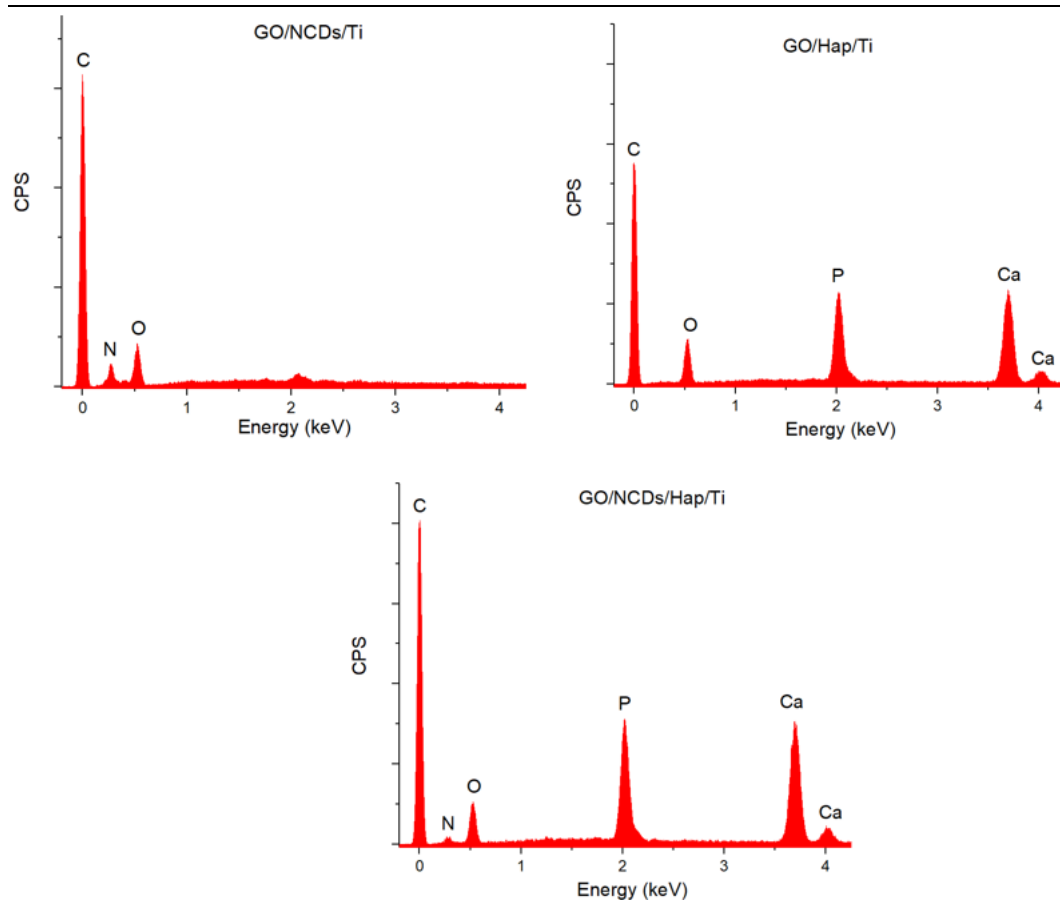


Figure S2. The element EDS of GO/NCDs/Ti, GO/Hap/Ti, and GO/NCDs/Hap/Ti.

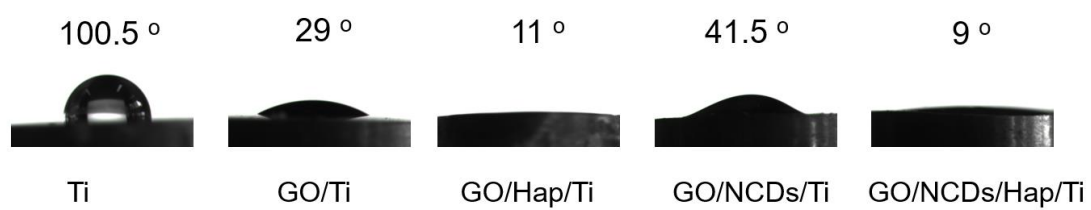


Figure S3. The contact angles of Ti, GO/Ti, GO/NCDs/Ti, GO/Hap/Ti and GO/NCDs/Hap/Ti.

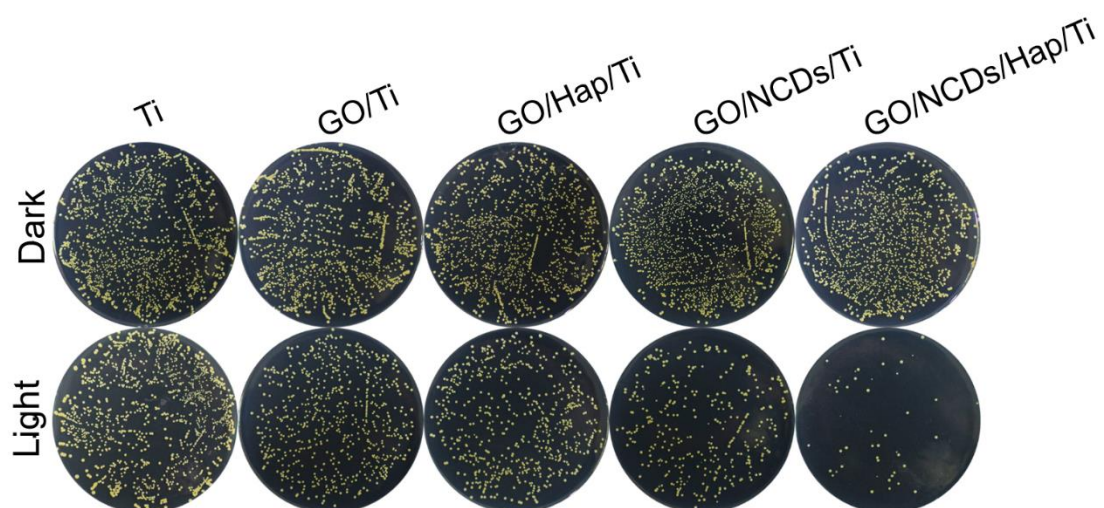


Figure S4. The antibacterial efficiency towards *S. aureus* of Ti, GO/Ti, GO/NCDS/Ti, GO/Hap/Ti and GO/NCDS/Hap/Ti after NIR irradiation for 15 min.

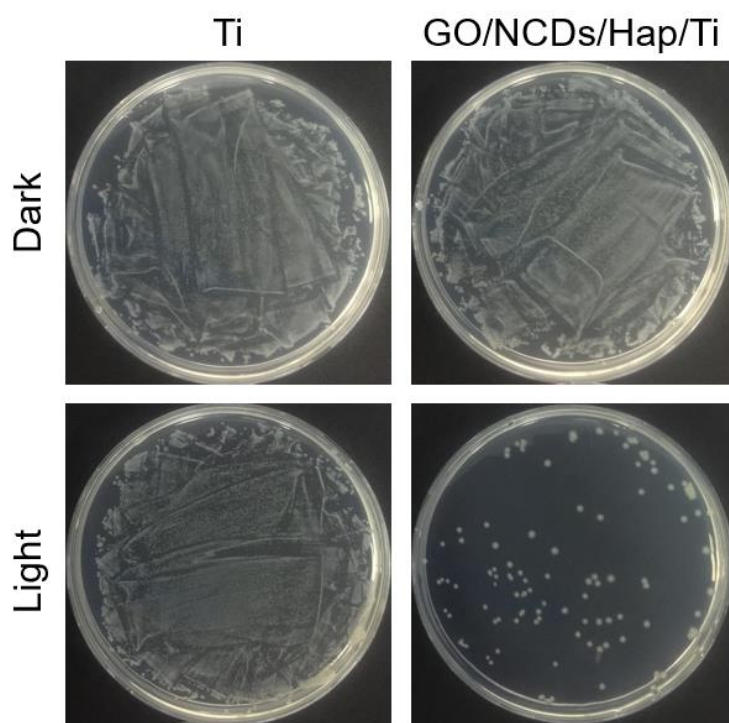


Figure S5. The antibacterial efficiency of Ti, GO/Ti, GO/NCDs/Ti, GO/Hap/Ti and GO/NCDs/Hap/Ti towards *E. coli* after NIR irradiation for 15 min.

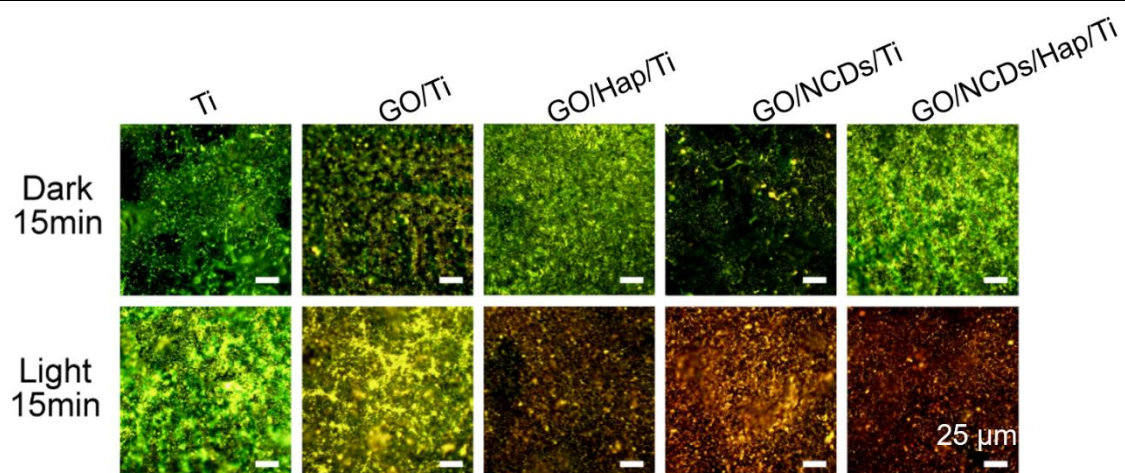


Figure S6. The live-dead fluorescence staining (green indicated live *S. aureus*, red indicated dead *S. aureus*) of Ti, GO/Ti, GO/NCDs/Ti, GO/Hap/Ti and GO/NCDs/Hap/Ti after NIR irradiation for 15 min.

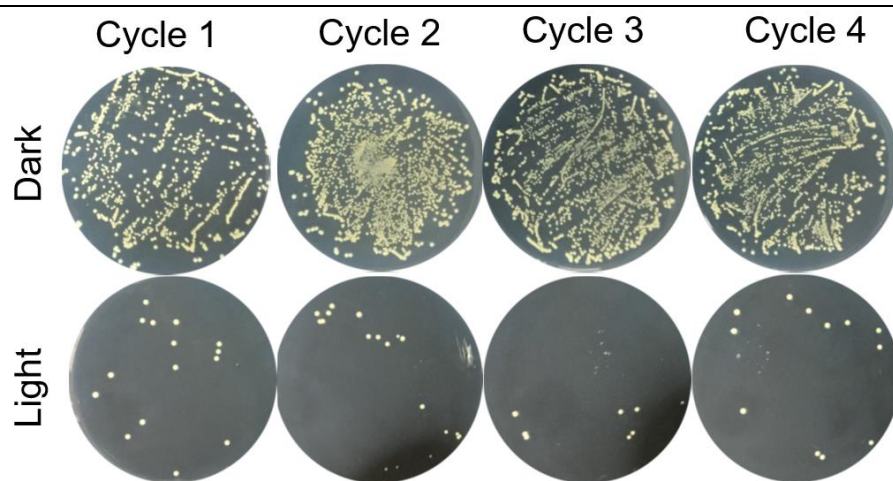


Figure S7. The spread plates of 4 cycles of Ti, GO/Ti, GO/NCDs/Ti, GO/Hap/Ti and GO/NCDs/Hap/Ti after NIR irradiation for 15 min.

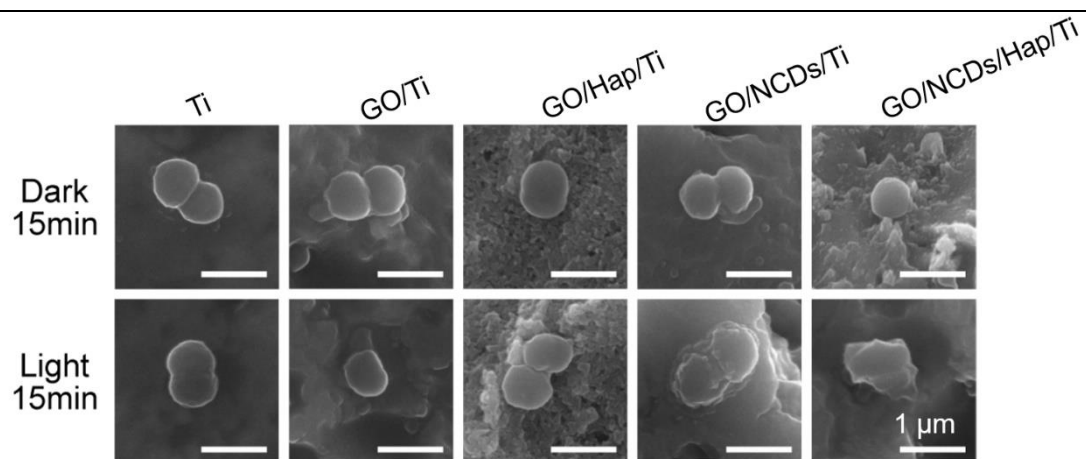


Figure S8. The SEM morphology of *S. aureus* on Ti, GO/Ti, GO/NCDs/Ti, GO/Hap/Ti and GO/NCDs/Hap/Ti after NIR irradiation for 15 min.

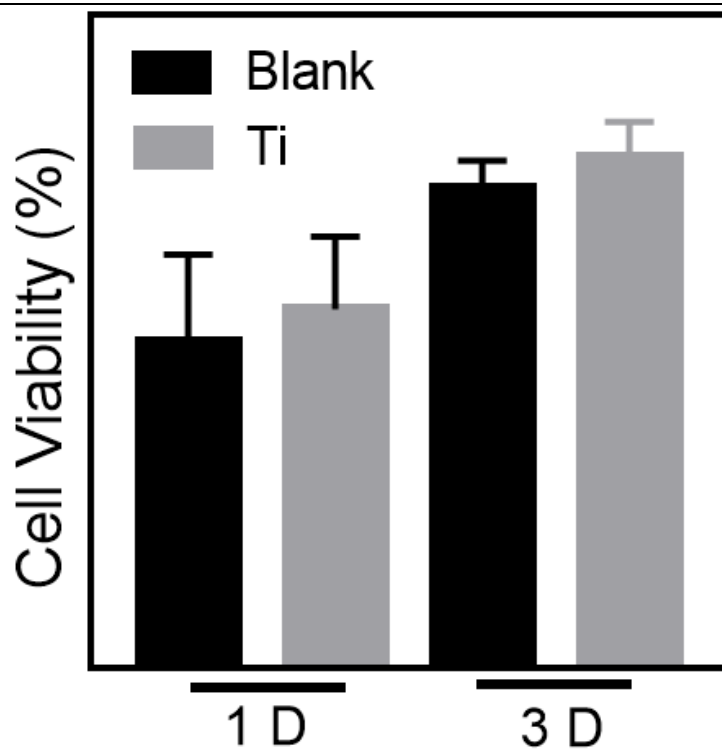


Figure S9. The cell viability of Ti group and the blank group at 1 D and 3 D.

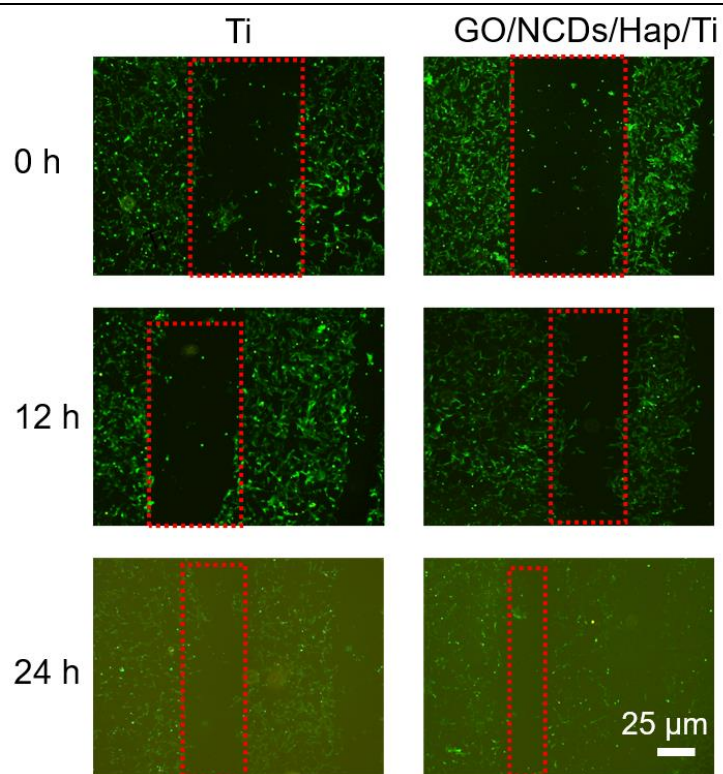


Figure S10. The cells scratch assay of Ti and GO/NCDs/Hap/Ti after NIR irradiation at different incubation time.

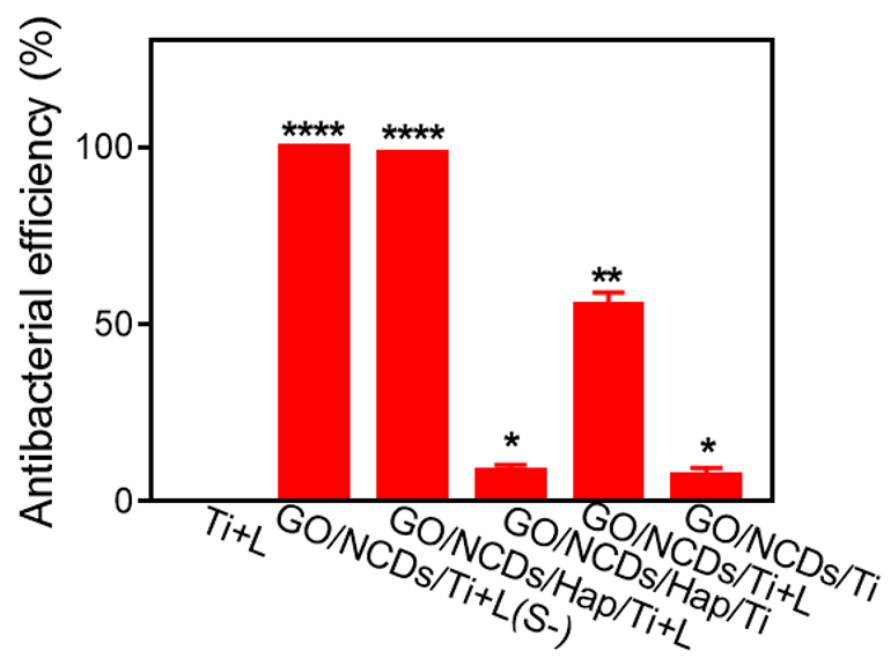


Figure S11. The antibacterial efficiency after NIR irradiation for 15 min *in vivo*.

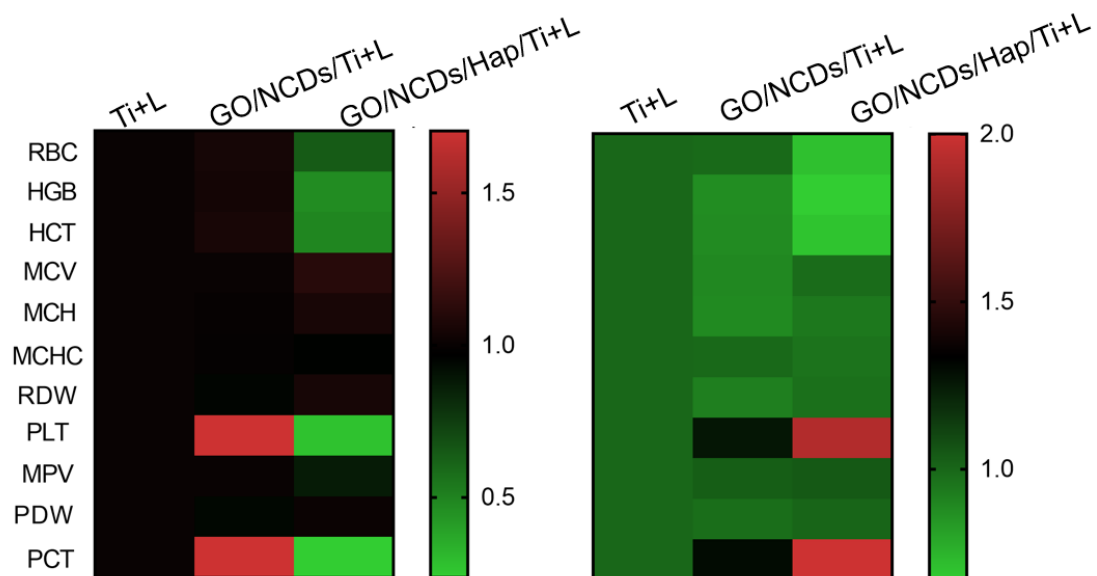


Figure S12. The blood routine examination after NIR irradiation for 15 min at 2 D (left) and 3 D (right) *in vivo*.

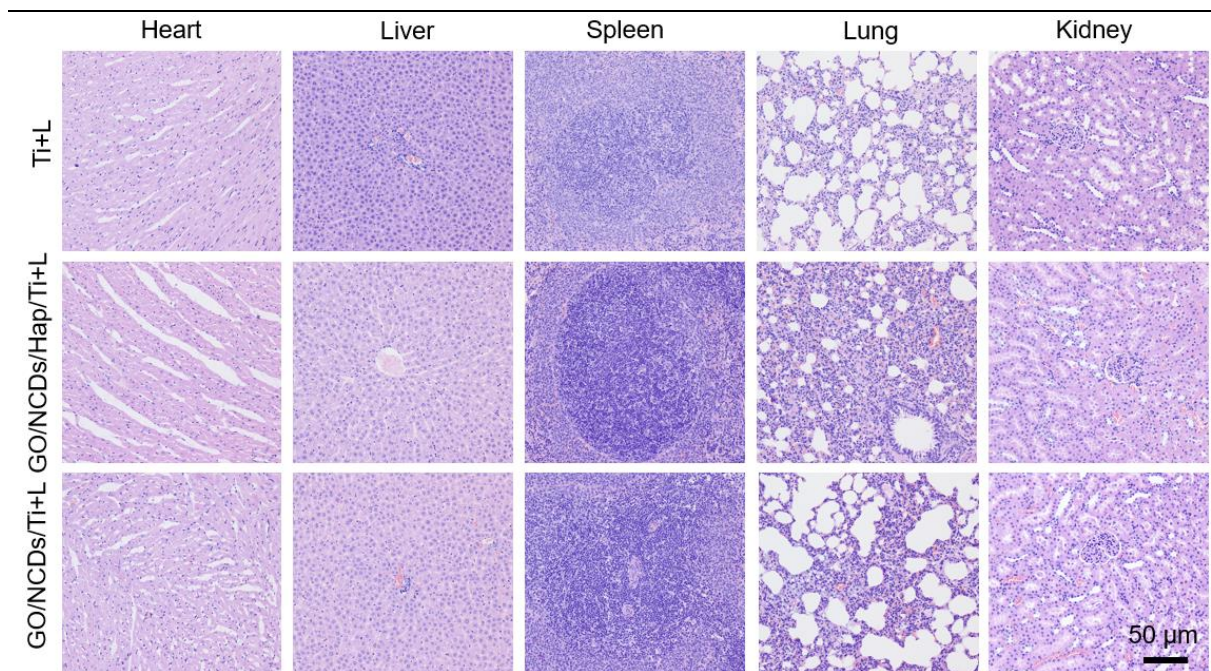


Figure S13. The H&E staining of main organs at 3 D treatment *in vivo*.

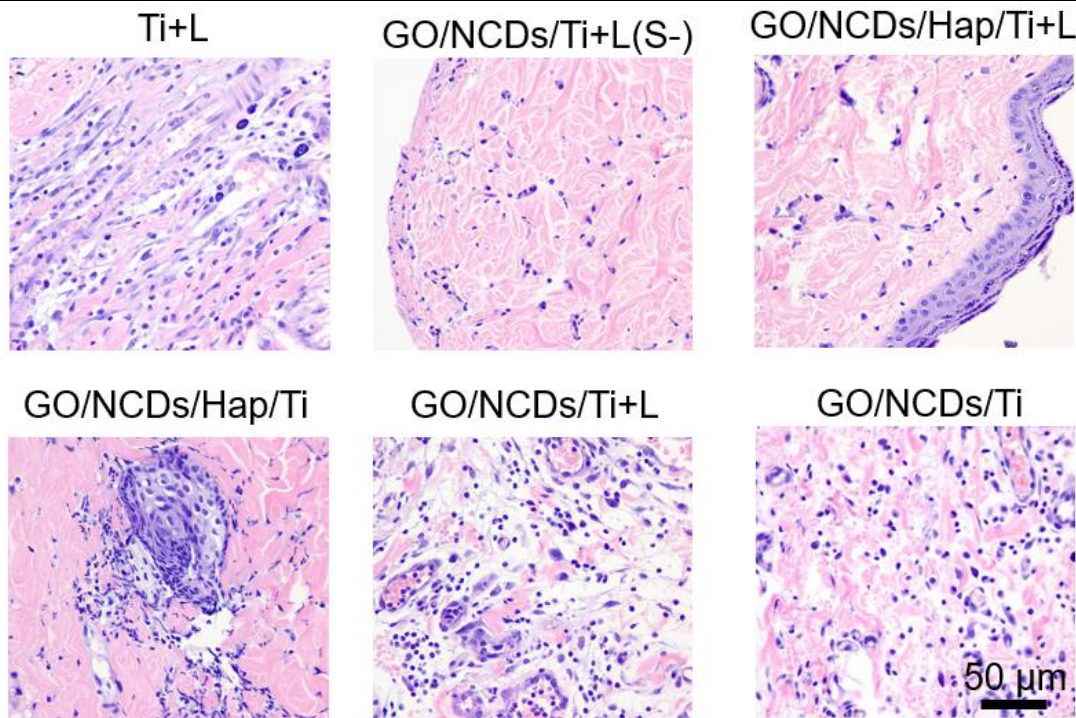


Figure S14. The H&E staining of infected tissues at 3 D treatment *in vivo*.

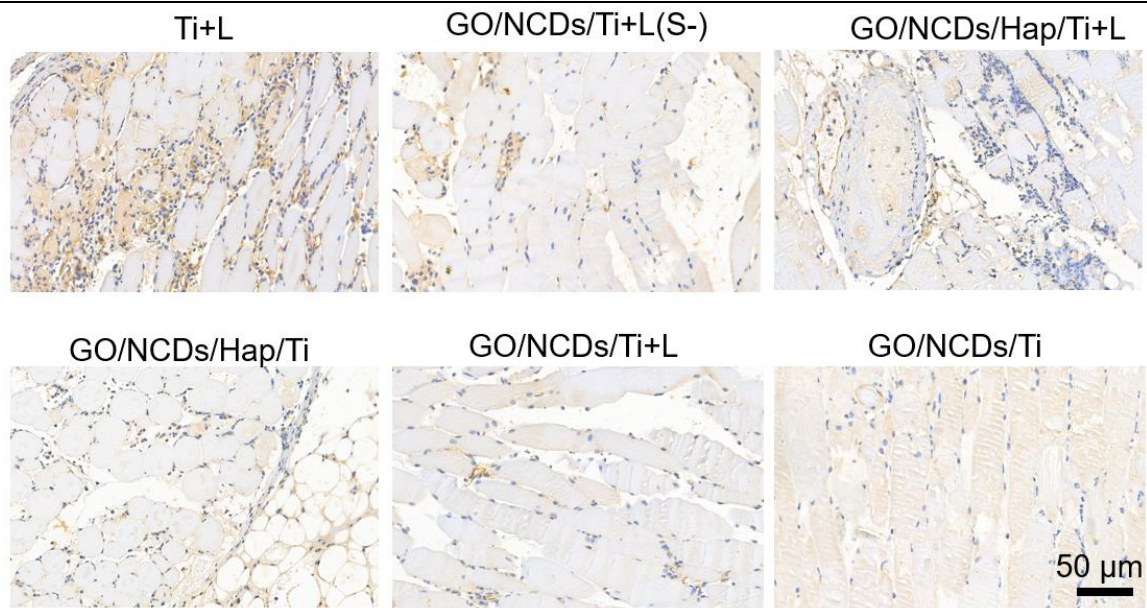


Figure S15. The immunohistochemical of infected tissues at 3 D treatment *in vivo* stained by CD31.

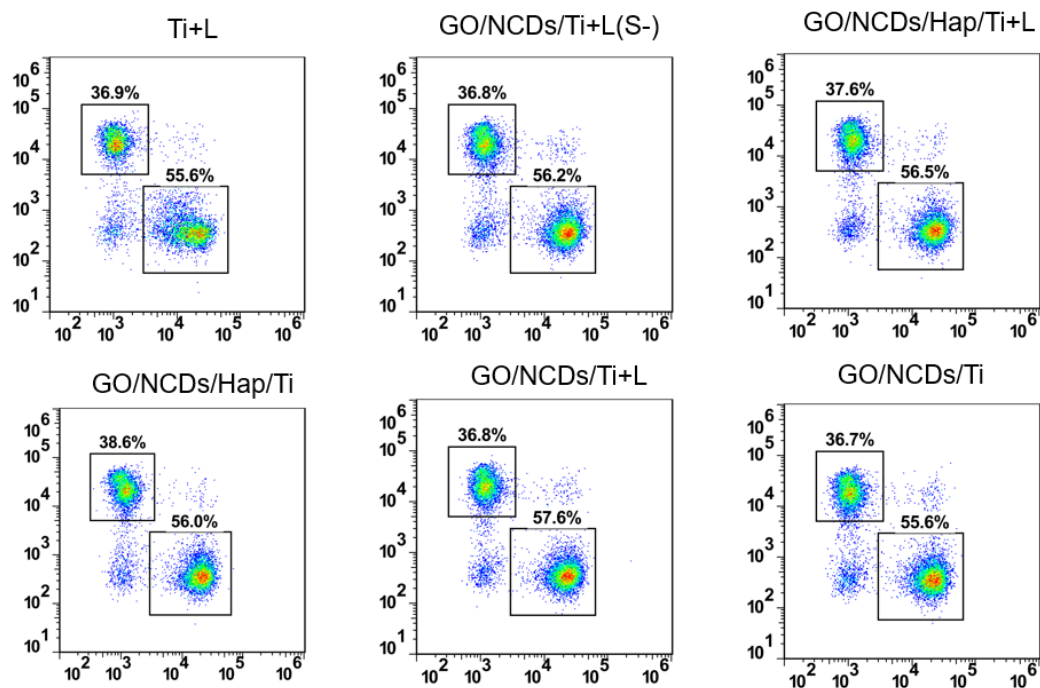


Figure S16. The flow cytometry of CD4 and CD8 lymphocyte in the tissue after irradiation for 3 D.

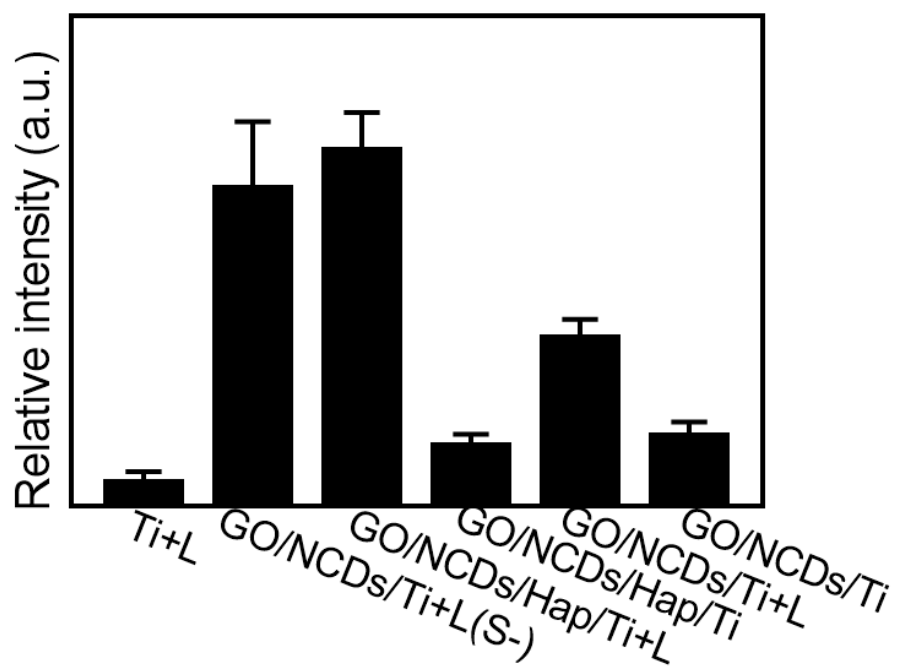


Figure S17. The data about neutrophil granulocyte at 3 D