Acid responsive Molybdenum (Mo)-based nanoparticles inhibit cGAS-STING signaling pathway for sepsis therapy

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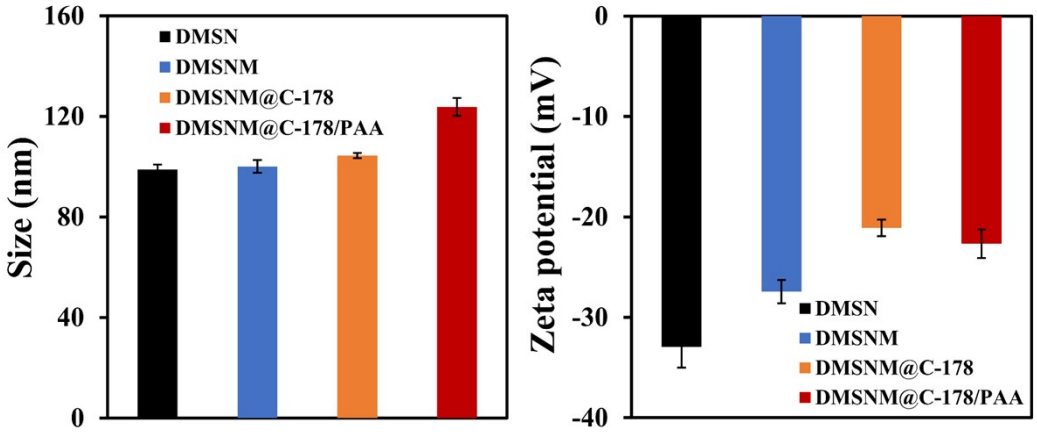

Figure S1. Size and Zeta potential of DMSN, DMSNM, DMSNM@C-178 and DMCNM@C-178/PAA. Data are expressed as mean ± SD (n=3).

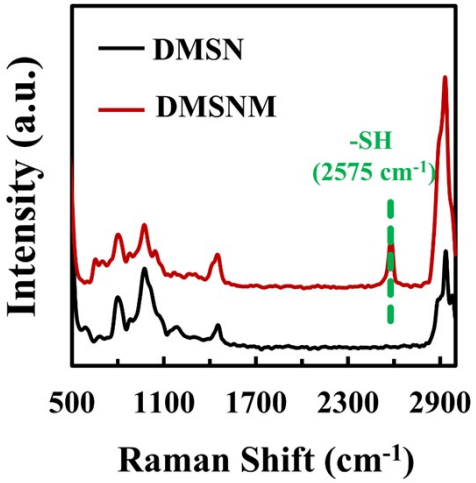

Figure S2. Raman spectrum of DMSN and DMSNM.

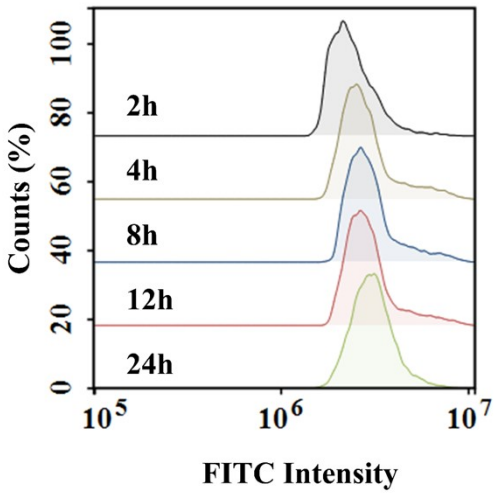

Figure S3. Flow cytometry analysis of cellular uptake of 100 μg/mL FITC-loaded DMSNM@C-178 in RAW264.7 cells at different times within 24 hours.

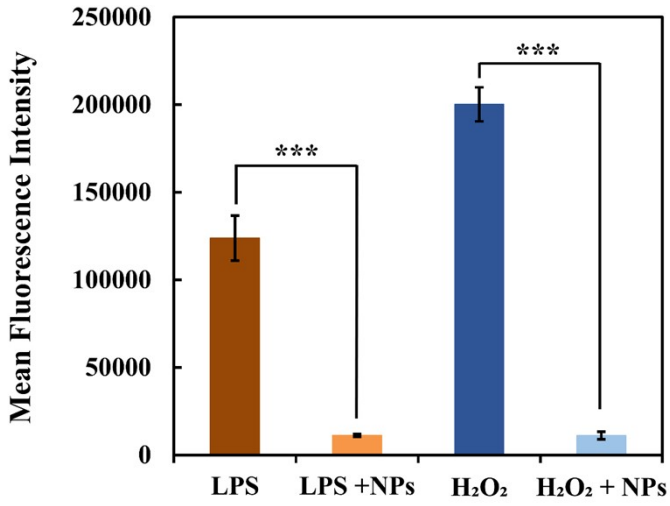

Figure S4. Detection of ROS-scavenging ability of 100 μg/mL DMSNM@C-178 NPs in RAW264.7 cells under different treatment in LPS and H_2O_2-stimulated by flow cytometry analysis Data are expressed as mean ± SD (n=3). *$p<0.05$, **$p<0.01$, ***$p<0.001$.

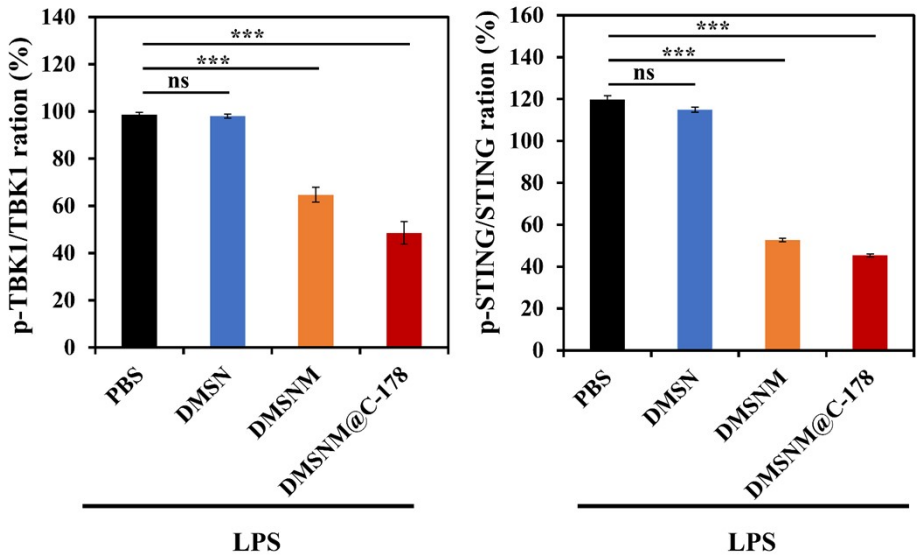

Figure S5. Western blot analysis of protein levels in RAW264.7 cells after treatment with PBS, DMSN, DMSNM, DMSNM@C-178 after LPS-stimulated. Data are expressed as mean ± SD (n=3). *$p<0.05$, **$p<0.01$, ***$p<0.001$.

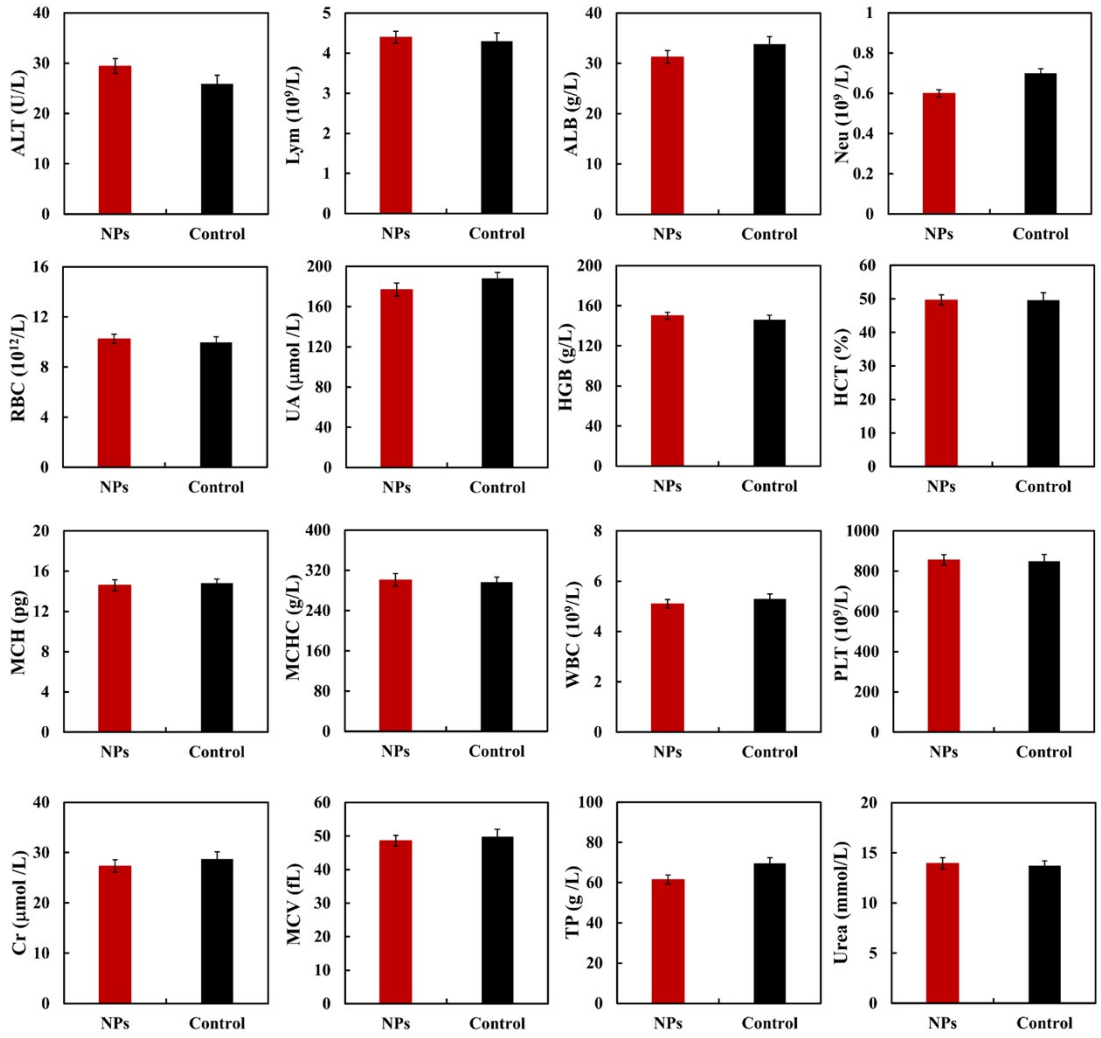

Figure S6. Blood biochemical and hematological analysis. "Control" represents the healthy mice; "NPs" represents the mice intravenously injected with DMSNM@C-178/PAA nanoparticles after 14 days.

The standard hematology markers include hematocrit (HCT), hemoglobin (HGB), lymphocyte absolute value (Lym), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), mean corpuscular volume (MCV), neutrophil absolute value (Neu), platelets (PLT), red blood cells (RBC), white blood cells (WBC).

The liver status is reflected by the levels of albumin (ALB), alanine transaminase (ALT), Creatinine (Cr), and total protein (TP), whilst kidney function is evaluated by measuring uric acid (UA) and Urea markers.

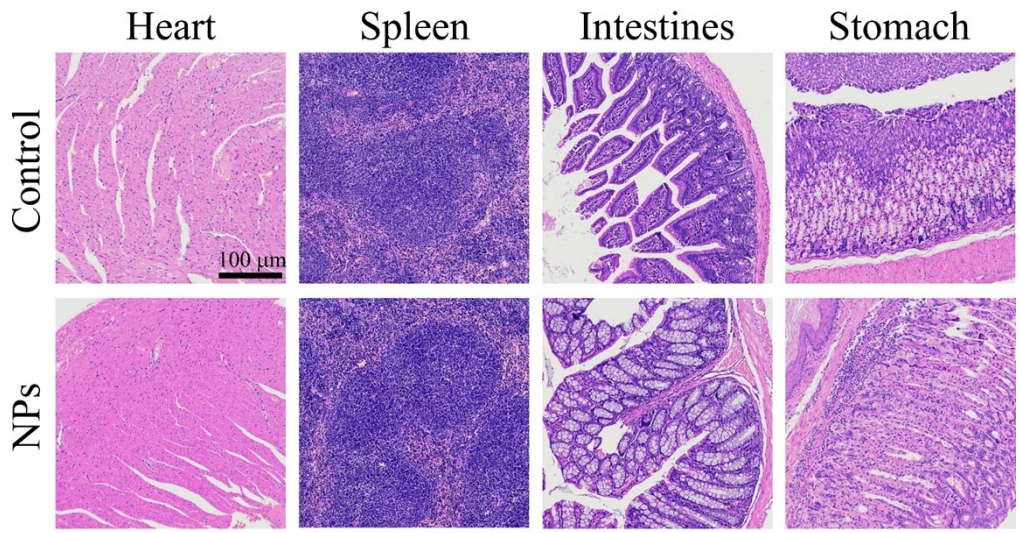

Figure S7. Hematoxylin and eosin (H&E) staining of heart, spleen, intestines and stomach. "Control" represents the healthy mice; "NPs" represents the mice intravenously injected with DMSNM@C-178/PAA nanoparticles after 14 days. Scale bar is 100 μm.

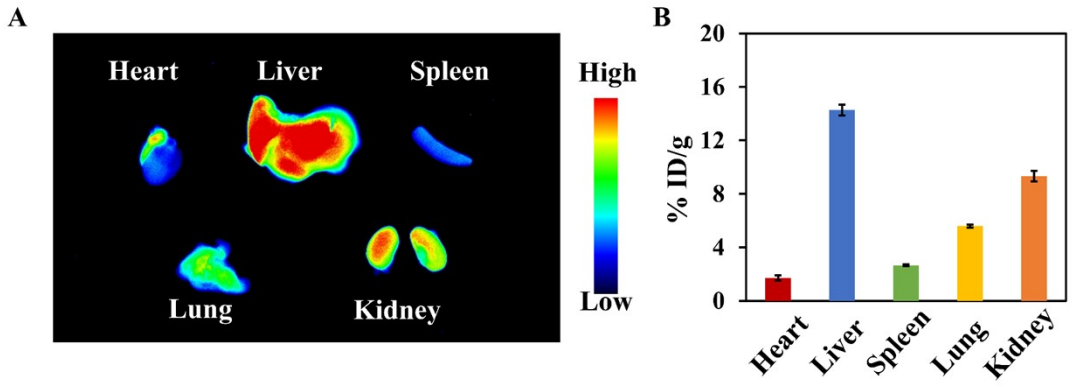

Figure S8. (A) Fluorescence imaging of heart, liver, spleen, lung and kidney 24 hours post-injection of DMSNM@C-178/PAA after LPS-challenge 1 hour. (B) The concentrations of Mo ions in mouse tissues were measured via ICP-MS analysis by DMSNM@C-178/PAA administration after LPS-challenge 1 hour. The results were presented as the percentage of the injected dose per gram of tissue (% ID/g).

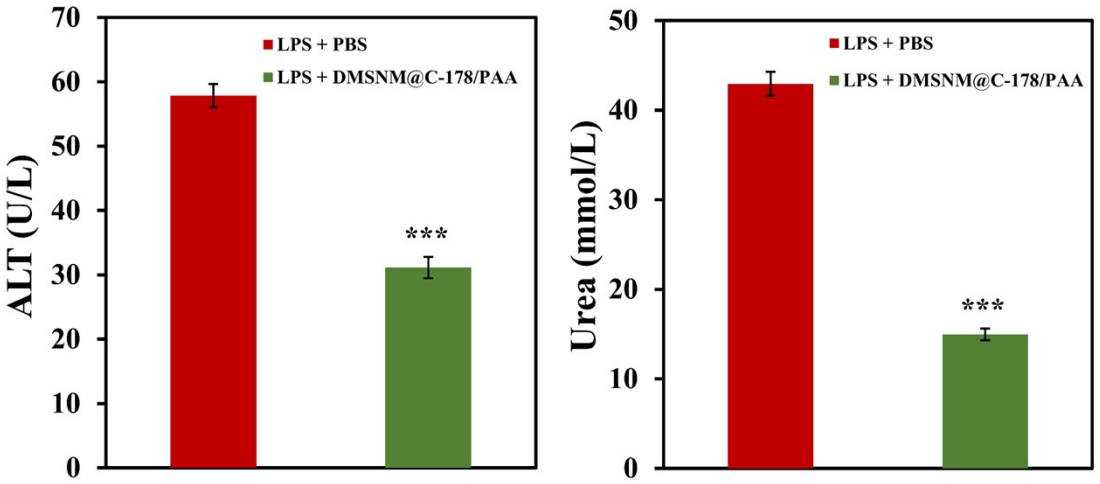

Figure S9. The levels of ALT (alanine transferase) and Urea of septic mice and the mice intravenously injected with DMSNM@C-178/PAA nanoparticles. Data are expressed as mean ± SD (n=3). **p<0.05, **p<0.01, ***p<0.001.*