Supplemental Materials

Macrophage-derived Hybrid Exosome-mimics Nanovesicles Loaded with Black Phosphorus for Multimodal Rheumatoid Arthritis Therapy

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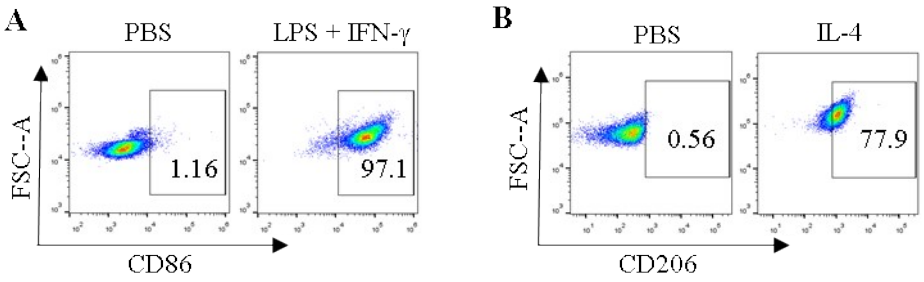

Fig. S1 The flow cytometry analysis of M1 (A) and M2 (B) macrophages.

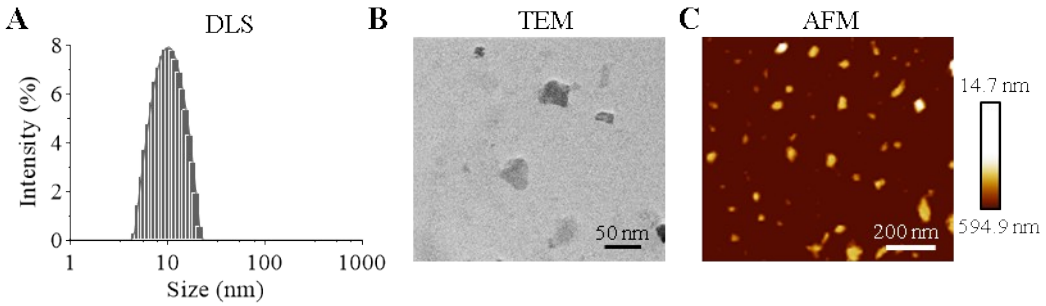

Fig. S2 The diameter distribution (A), TEM (B) and atomic force microscope (C) of naked BP.

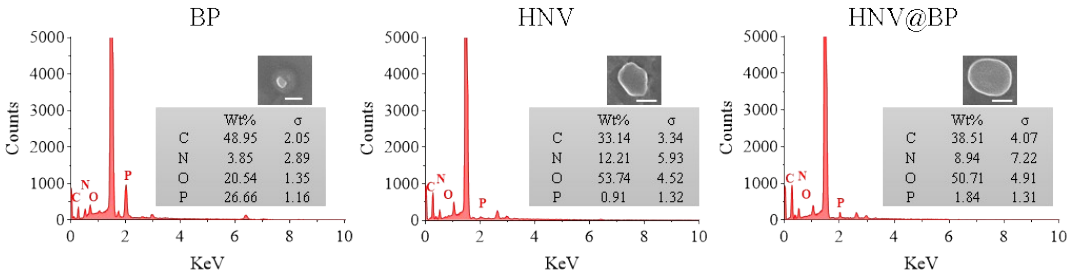

Fig. S3 SEM-EDX analysis of BP, HNV, and HNV@BP. The scale bar represents 100 nm.

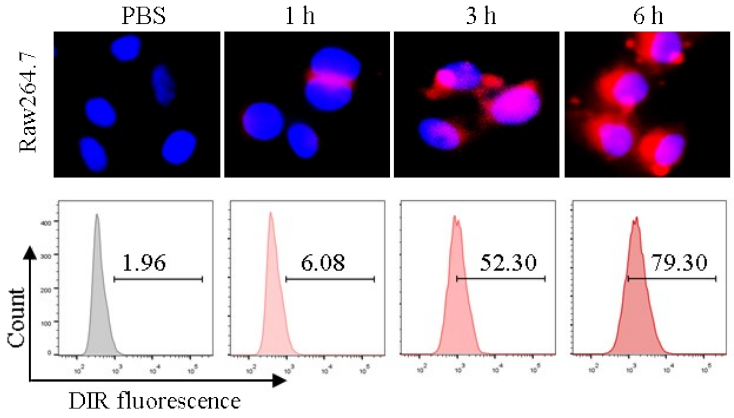

Fig. S4 The cellular uptake behaviors of M0 macrophage for HNV@BP.

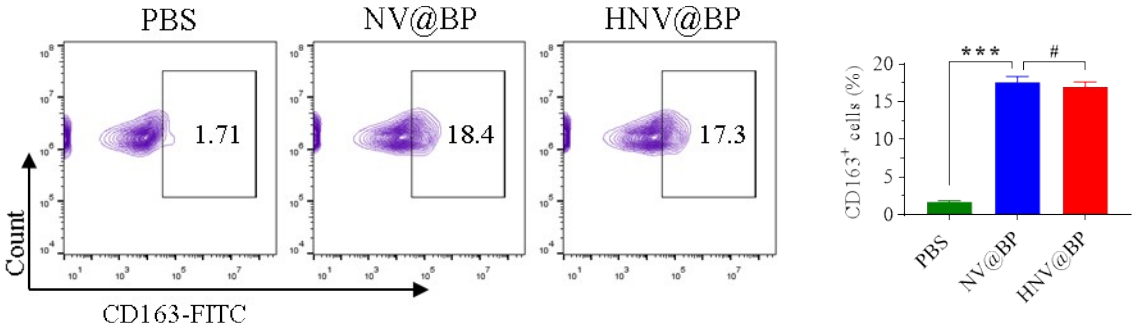

Fig. S5 Flow cytometry analysis of CD163 expression. M0 macrophages were incubated the BP-loaded nanovesicles (200 μg/mL) for 48 h.

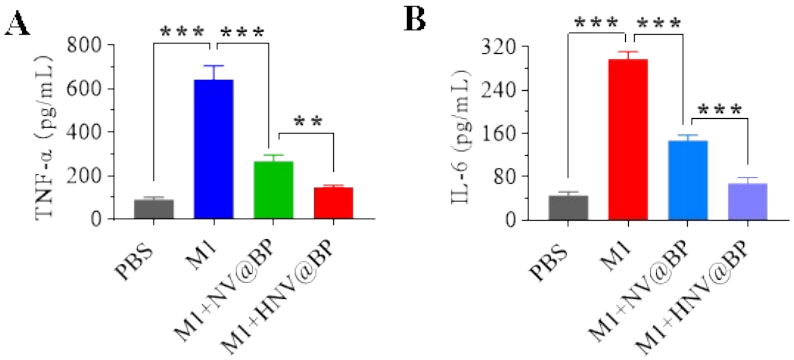

Fig. S6 M1 macrophages (pretreated M0 with LPS and IFN-γ for 48 h) were incubated with BP-loaded nanovesicles (200 μg/mL) in the upper layer and co-cultured with M0 macrophages (lower layer) for 48 h followed by the examination of TNF-α (A) and IL-6 (B) in the culture medium of lower layer.

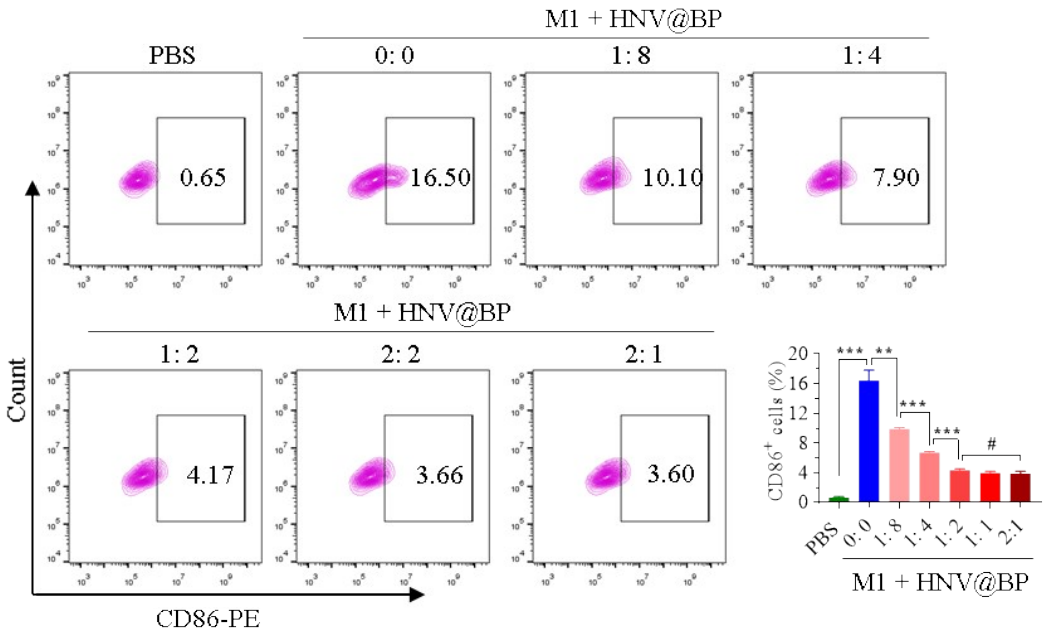

Fig. S7 M1 macrophages (pretreated M0 with LPS and IFN-γ for 48 h) were incubated with different mass ratios (M1 membrane: NV) of BP-loaded nanovesicles (100 μg/mL) in the upper layer and co-cultured with M0 macrophages (lower layer) for 72 h followed by the examination of CD86 expression on the cells of lower layer.

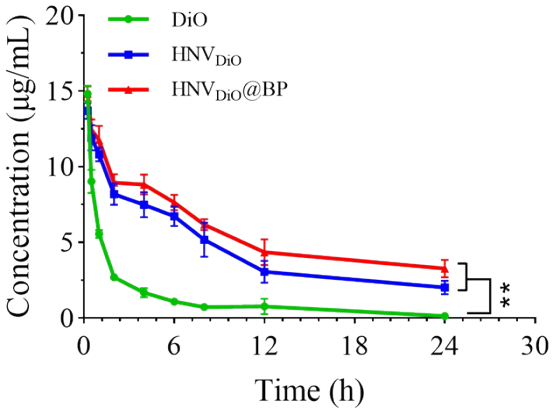

Fig. S8 Blood circulation analysis of HNV@BP. Free DiO dye, DiO-stained HNV and HNV@BP were administrated by intravenous injection. The whole blood was collected from eye socket (n=3) at different time intervals. The plasma concentration of DiO was determined by an automatic microplate reader and calculated according to a standard curve.

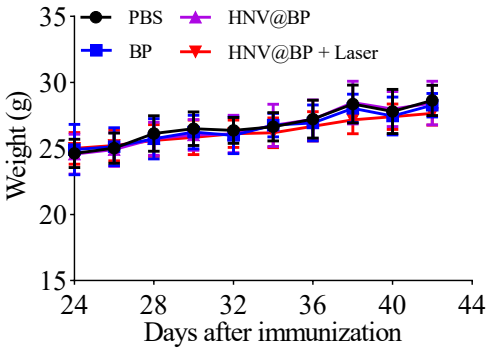

Fig. S9 The body weight change of mice with different treatments.

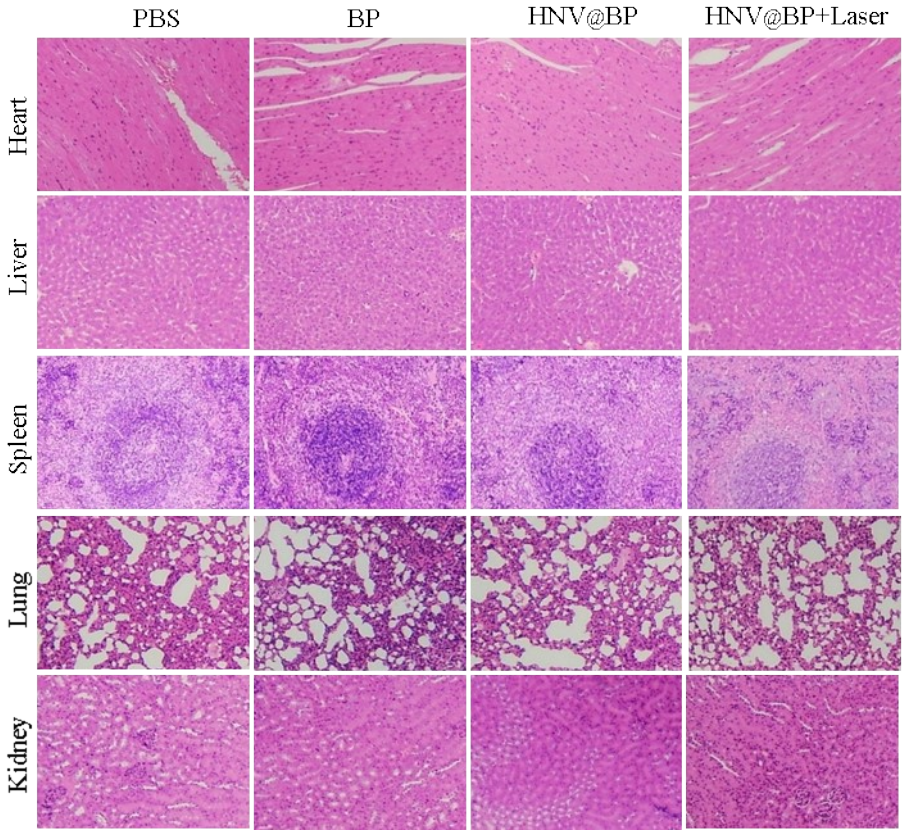

Fig. S10 H&E staining of the major organs from mice with different treatments.