Two-dimensional Biodegradable Black Phosphorus Nanosheets Promote Large Full-thickness Wound Healing through in situ regeneration therapy

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Supporting Information.

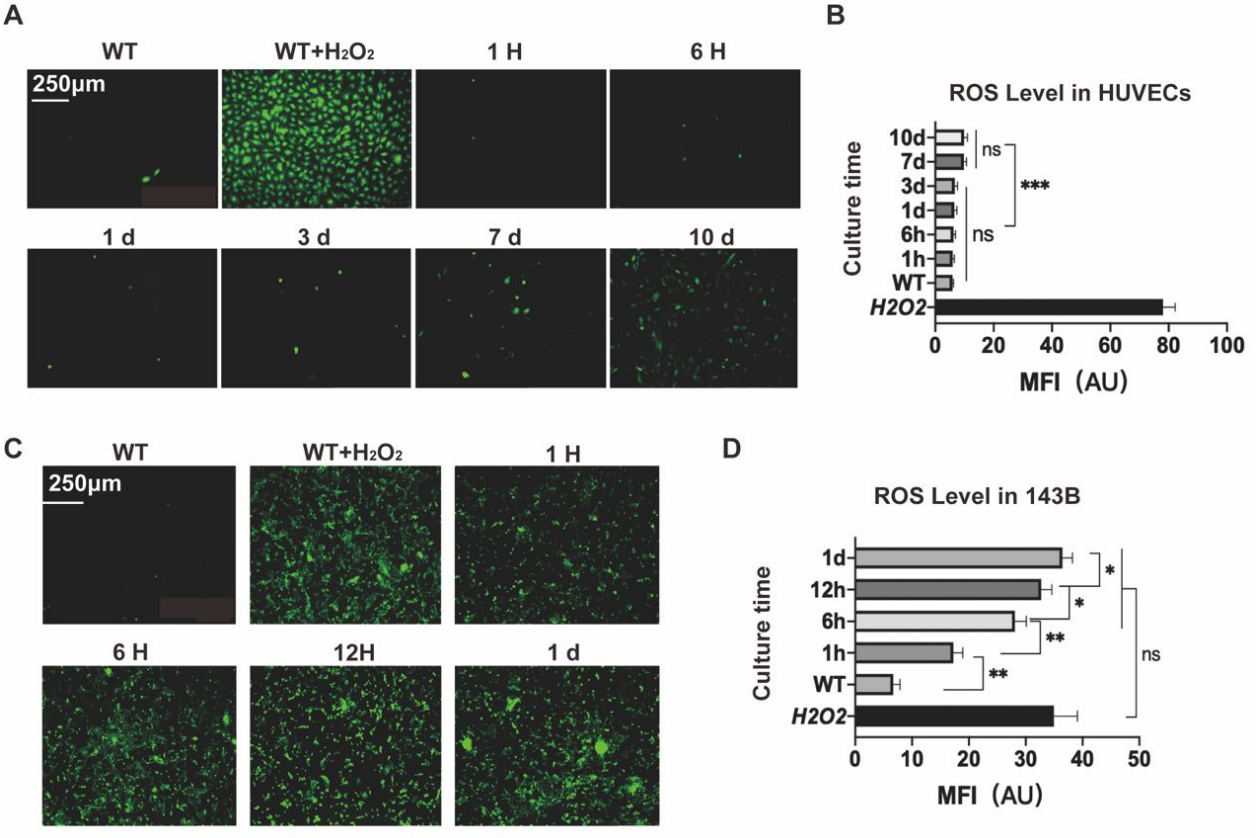

Figure S1. BPNS' ROS-mediated mechanism. (A) Intracellular ROS level in HUVECs co-cultured with BPNS for different times. Scale Bar: 250μm. (B) Quantitative results of ROS level MFI analysis in HUVECs. (C) Intracellular ROS level in 143B cultured with BPNS for different times. Scale Bar: 250μm. (D) Quantitative results of ROS level MFI analysis in 143B. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, ns: not significant.

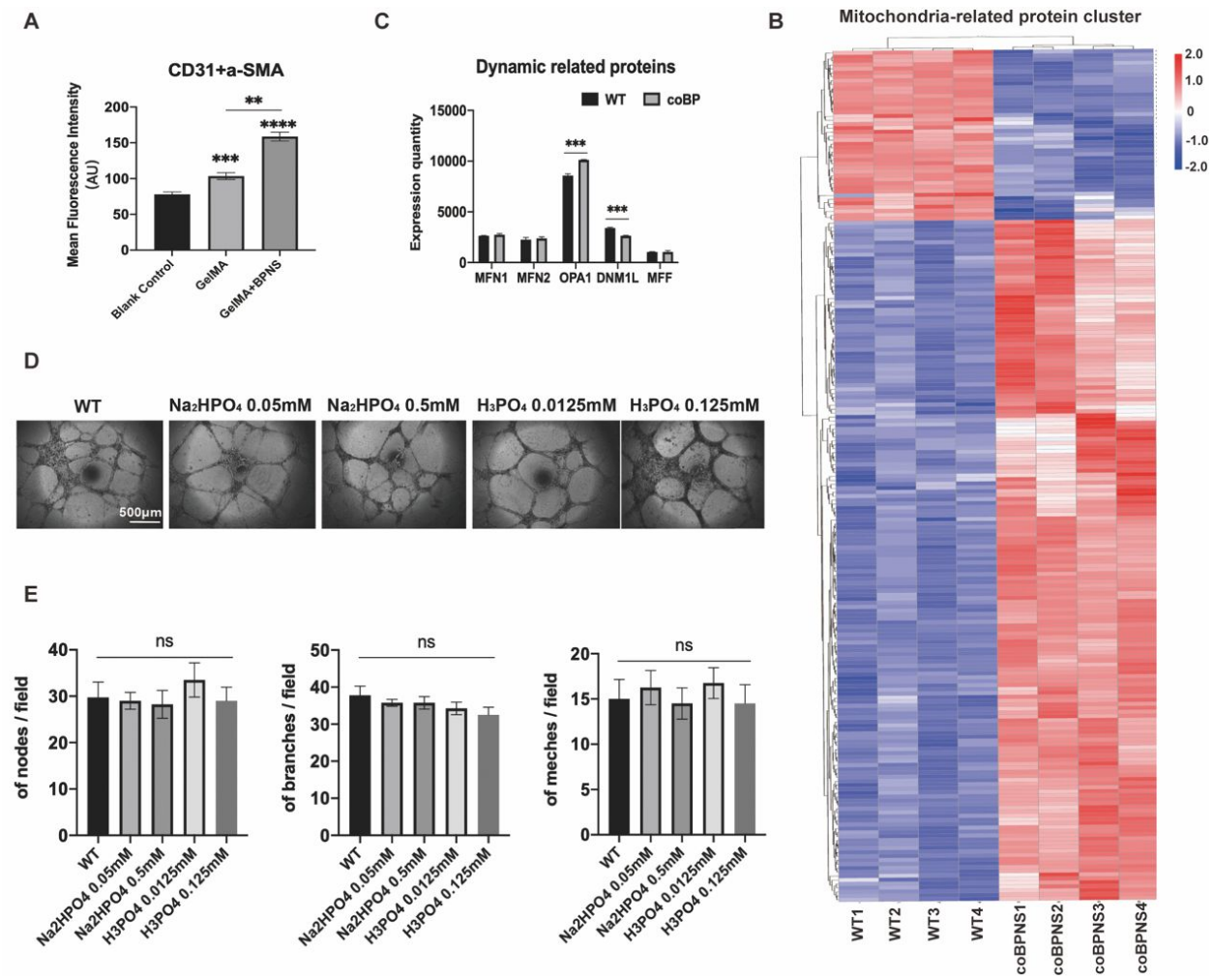

Figure S2. (A) Quantitative results of CD31 and a-SMA MFI analysis in vivo. (B) the clustering heatmap of mitochondrion-related proteins expression. (C) Expression of mitochondrial dynamic related proteins in proteomic. (E) Tube formation assays of HUVECs co-cultured with different concentrations of H_3PO_4 and Na_2HPO_4. Scale Bar: 500μm. (F) Quantitative results of tube formation assays of HUVECs co-cultured with varying concentrations of H_3PO_4 and Na_2HPO_4.

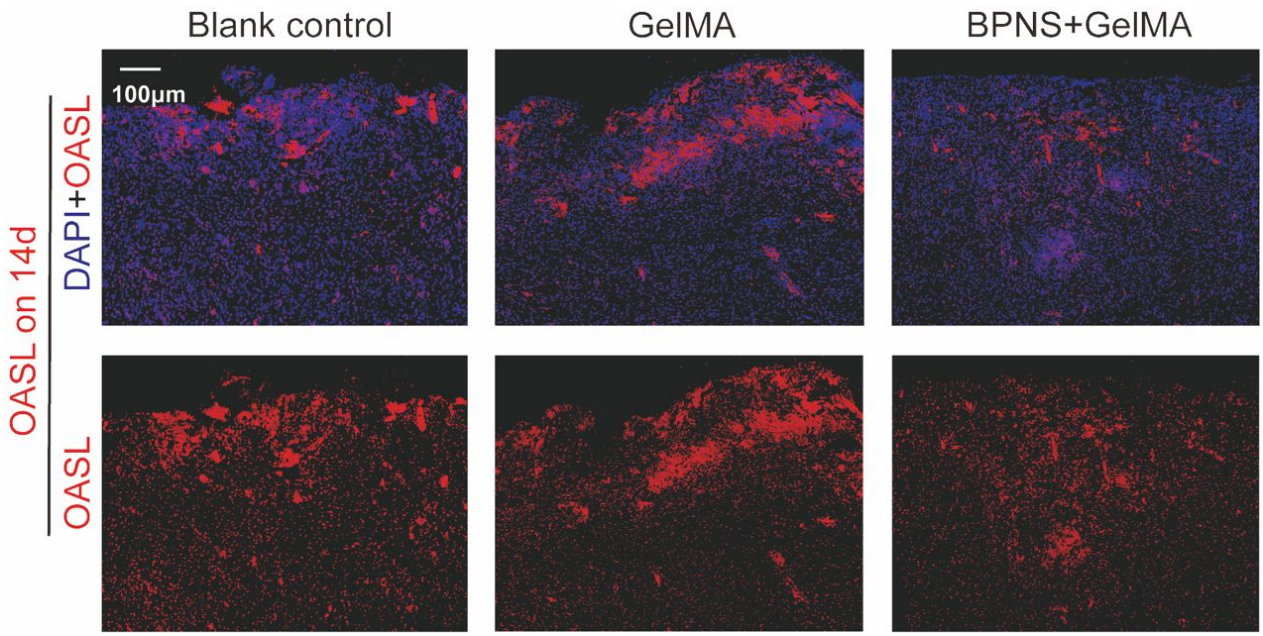

Figure S3. The expression of OASL in vivo on day 14. On day 14, the blank control and GelMA groups significantly expressed OASL in the superficial layer, whereas the GelMA/BPNS group presented it in the deep dermis.

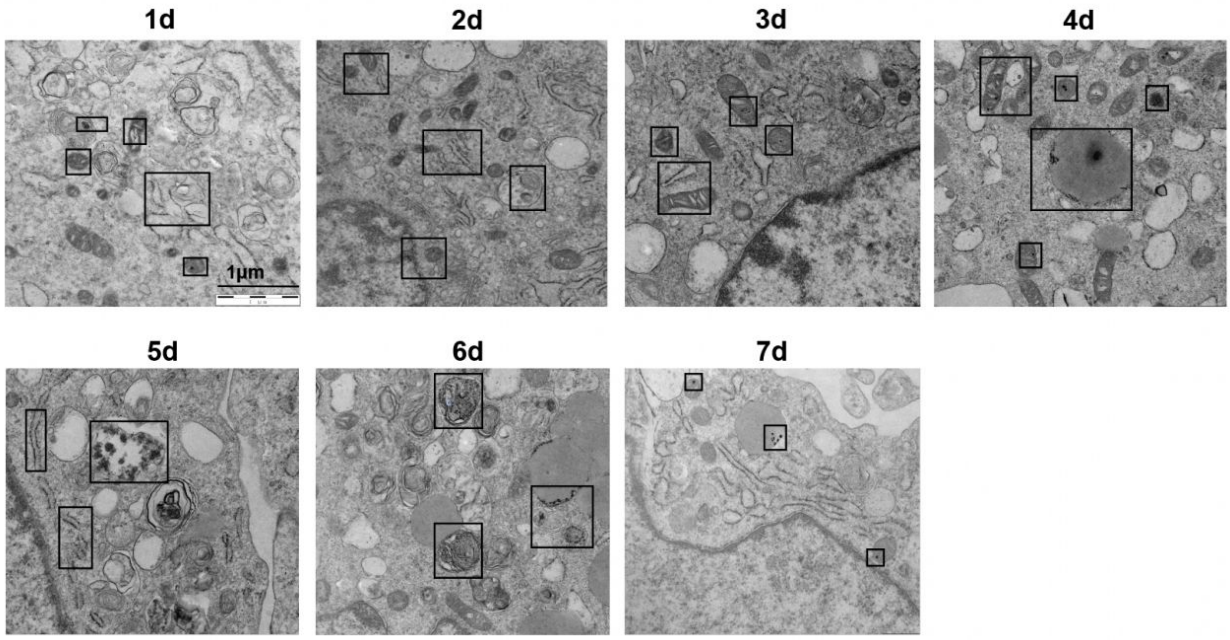

Figure S4. The distribution and degradation of BPNS in ECs for seven days. There is no significant accumulation of BPNS in mitochondria. Scale Bar: 1μm.

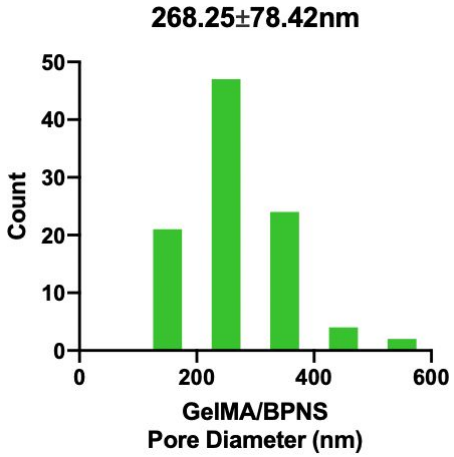

Figure S5. Pore diameter analysis of 20w/v% GelMA/BPNS showed the mean size of pore is 268.25±78.42nm.