Supporting Information

Endothelial Dysfunction and Transcriptome Aberration in Mouse Aortas Induced by Black Phosphorus Quantum Dots and Nanosheets

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A total of 11 pages including 2 tables and 8 figures

Table S1. The primers used for qPCR.

Gene	Primer Sequences (5' to 3')
Human eNOS	CCGAGTCCTCACCGCCTTCT
	GGTAACATCGCCGCAGACAAA
Human iNOS	CCGAGGCAAACAGCACATTCAGAT
	GAGTCCTGCACGAGCCTGTA
Human GAPDH	CCATGACAACTTTGGTATCGTGGAA
	GGCCATCACGCCACAGTTTC
Mouse Myl4	ACATCTCCCGCAACAAGG
	TCTCCCAGGGTAGCAAGG
Mouse Myh6	GCAGGACCTGGTGGACAA
	ACCTTGCGGAACTTGGAC
Mouse Tnnc1	TGACAGAGGAGCAGAAGAA
	TGTAGCCATCAGCGTTTT
Mouse GAPDH	CCTTCCGTGTTCCTACCC
	CAACCTGGTCCTCAGTGTAG

Table S2. The total DEGs and the number of upregulated or downregulated DEGs in aortas of mice after exposure to BP on day 1 and day 7 (BPQD_1 and BPNS_1 refer to 1 day after exposure to BP; BPQD_7 and BPNS_7 refer to 7 days after exposure to BP).

Treatment	Number of DEGs	Upregulation	Downregulation
BPQD_1	974	781	193
BPNS_1	1399	1141	258
BPQD_7	1155	475	680
BPNS_7	1702	1291	411

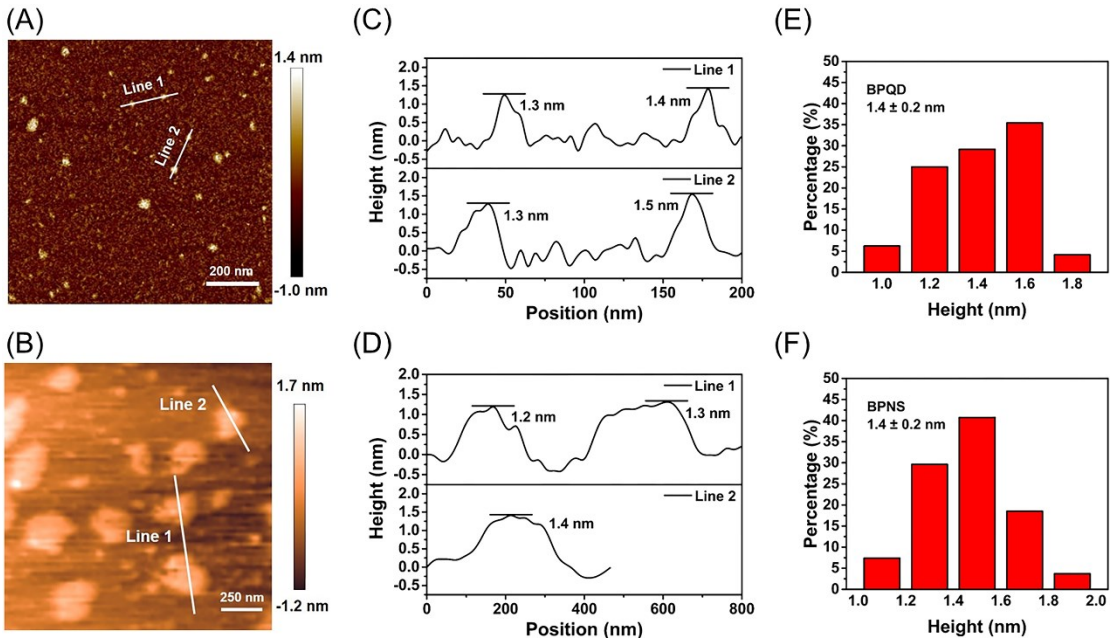

Figure S1. AFM characterization of BPQDs and BPNSs. Representative AFM topography of BPQDs (A) and BPNSs (B). (C) and (D) are height profiles along the white lines in (A) and (B), respectively. Statistical analysis of the heights of BPQDs (E) and BPNSs (F).

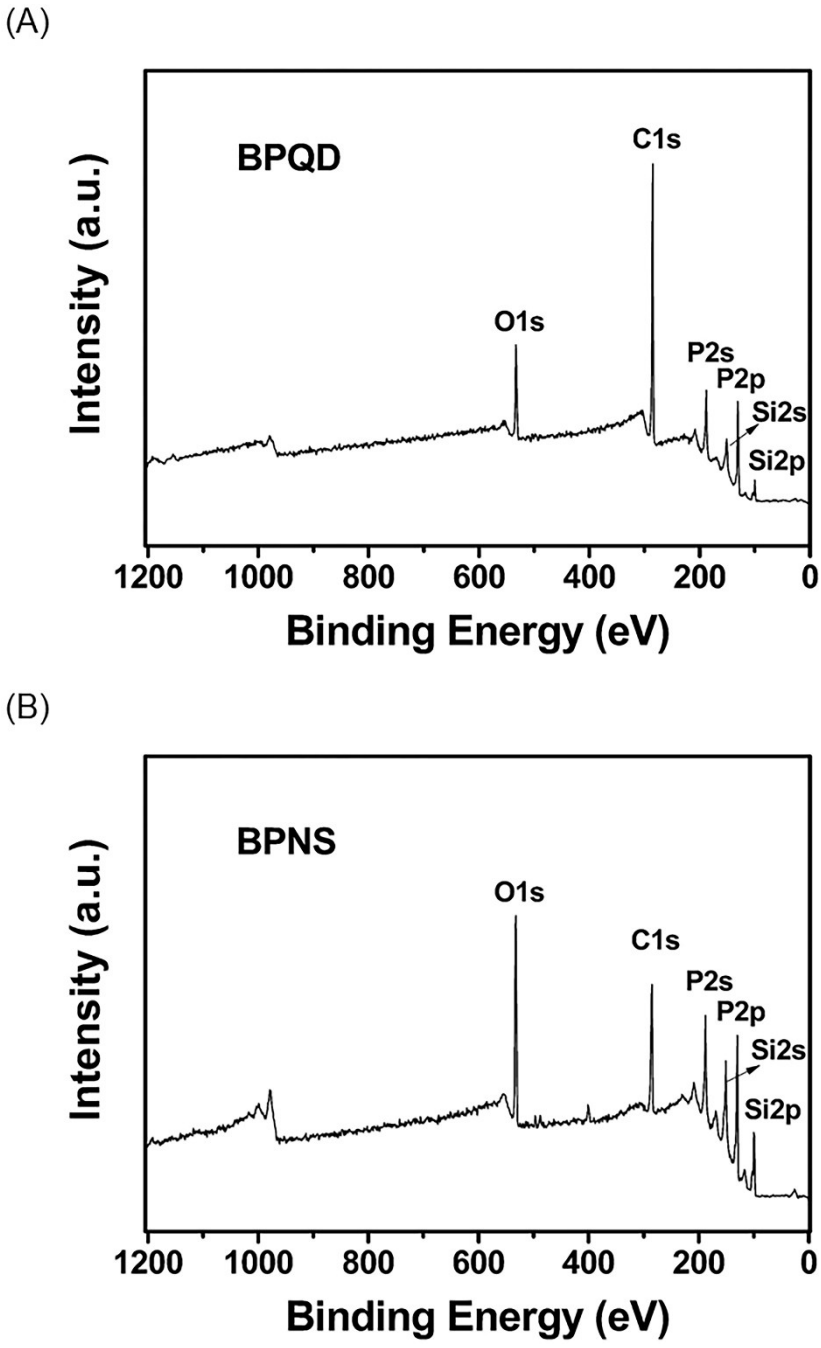

Figure S2. XPS spectra of BPQDs (A) and BPNSs (B).

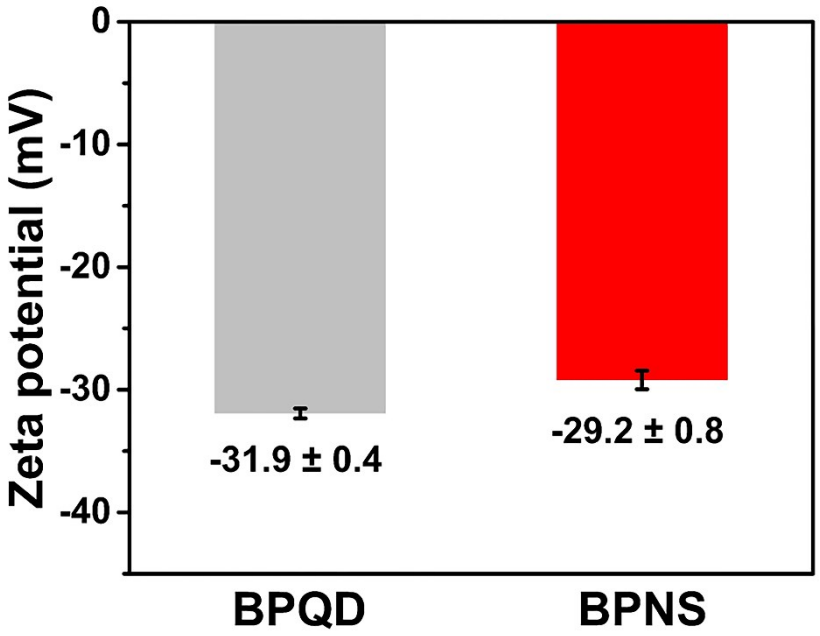

Figure S3. Zeta potential of BPQDs and BPNSs.

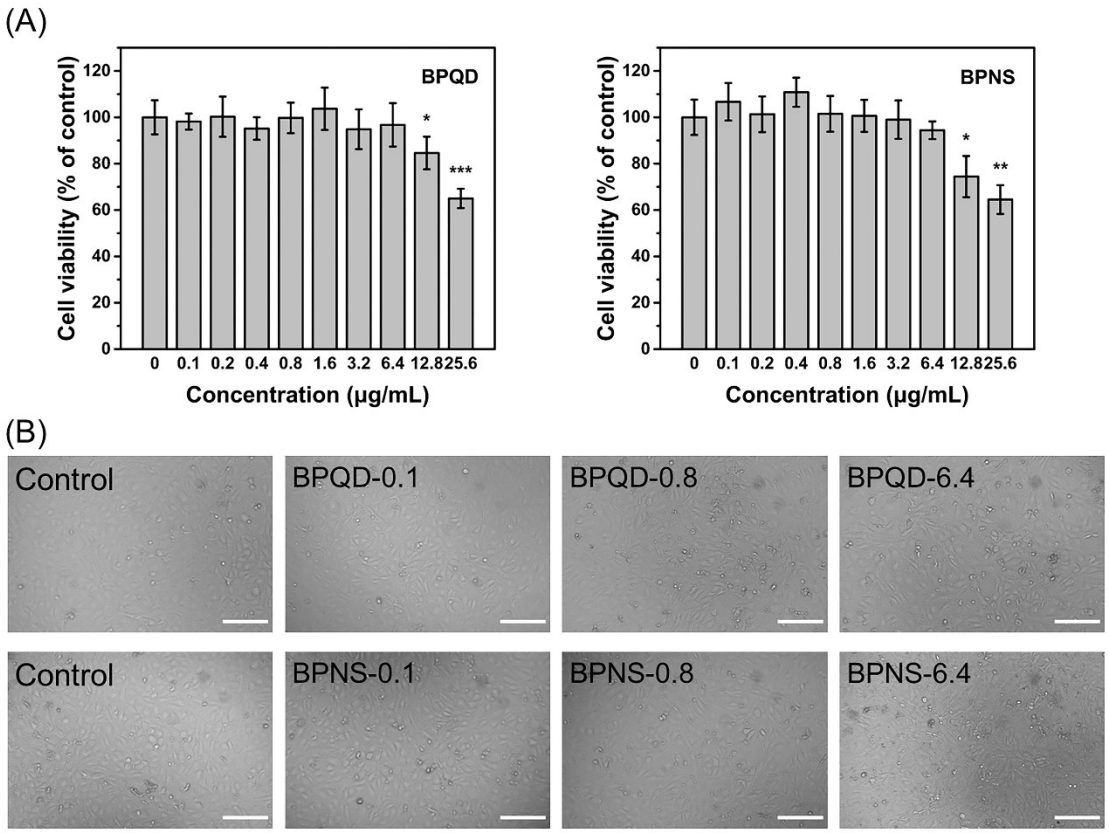

Figure S4. (A) Cell viability of HUVECs after 24 h incubation with BPQDs and BPNSs at different concentrations ranging from 0 to 25.6 μg/mL. (B) Representative optical microscopy images of HUVECs after 24 h incubation with BPQDs and BPNSs at 0.1, 0.8 and 6.4 μg/mL (Scale bar: 200 μm).

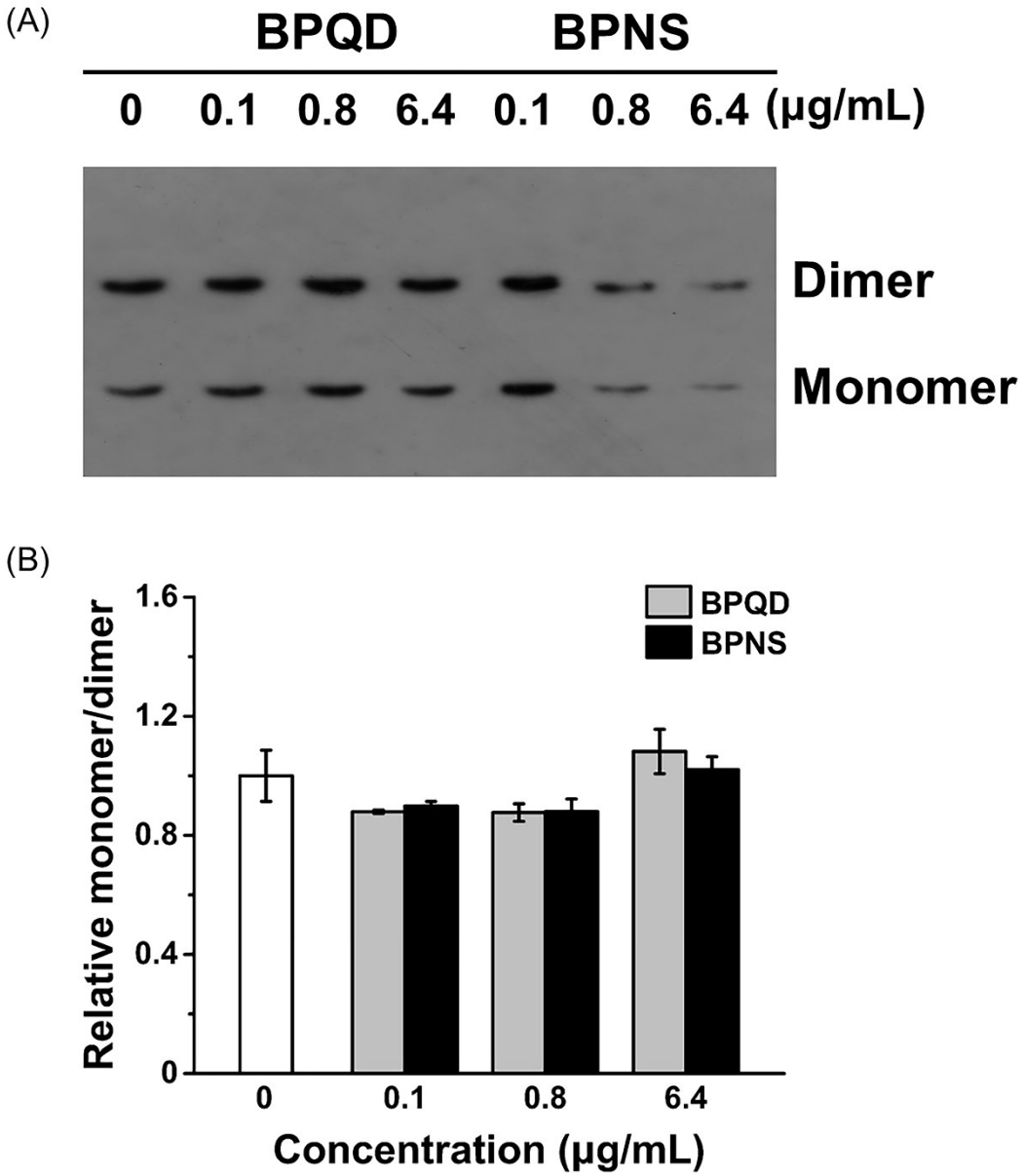

Figure S5. HUVECs were treated with BPQDs or BPNSs at the concentrations of 0.1, 0.8 and 6.4 μg/mL for 24 h. (A) Dimeric and monomeric form of eNOS determined by western blot. (B) The relative ratio of monomer to dimer of eNOS. Data shown represent mean fold change (± SD) relative to untreated cell.

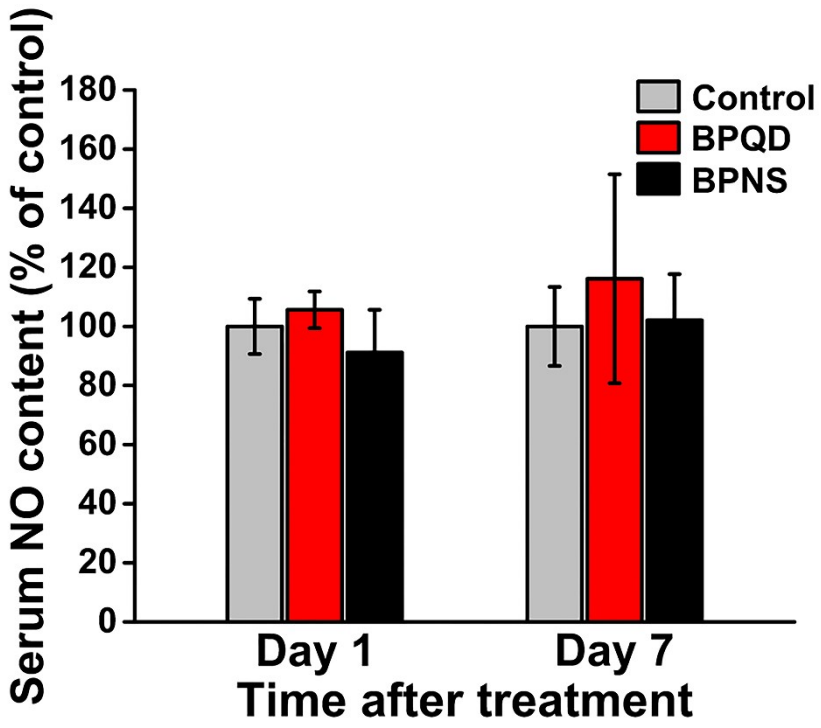

Figure S6. Serum NO level in mice intravenously injected with the BPQDs and BPNSs at 1 and 7 days post-administration.

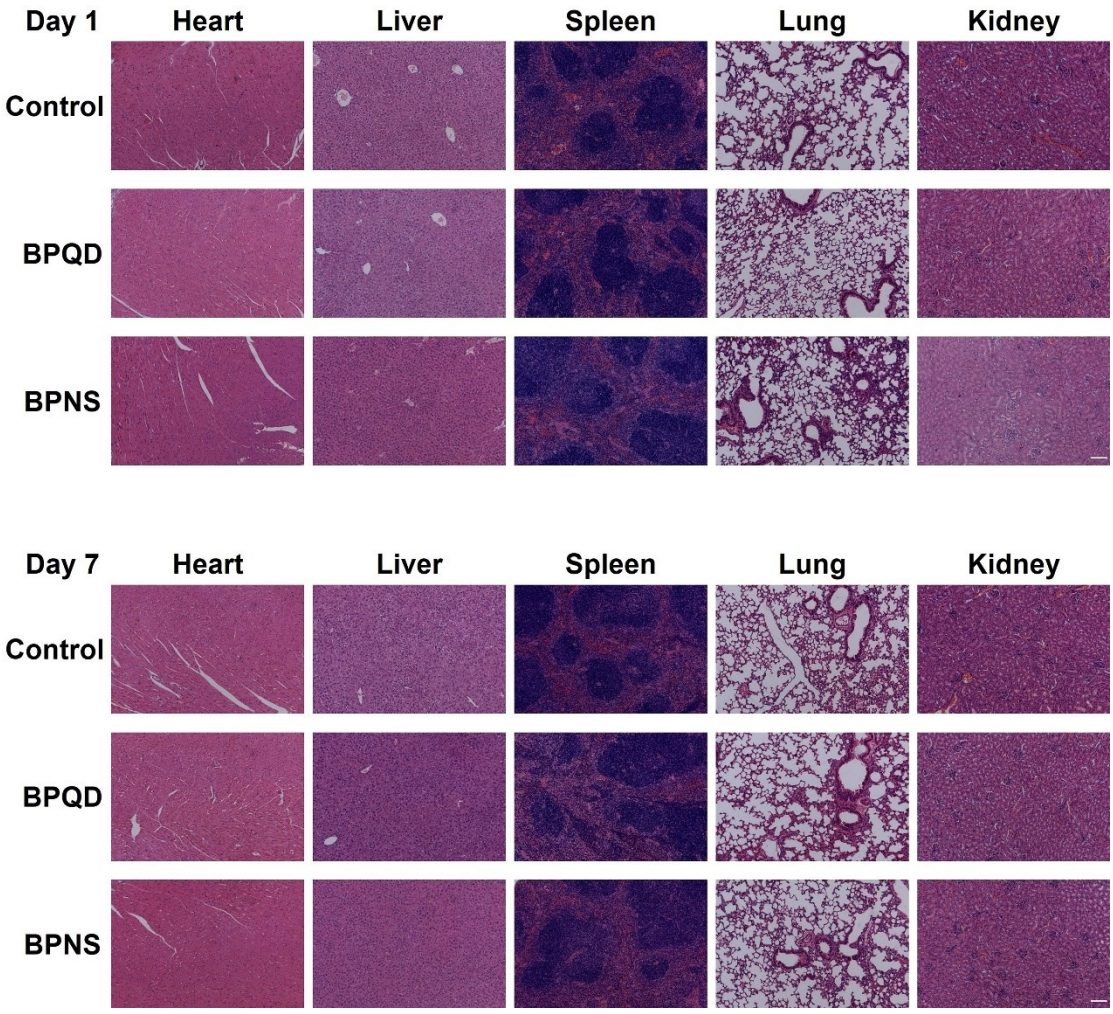

Figure S7. Histopathology evaluation following hematoxylin and eosin staining of heart, liver, spleen, lung, and kidney (Scale bar: 100 μm).

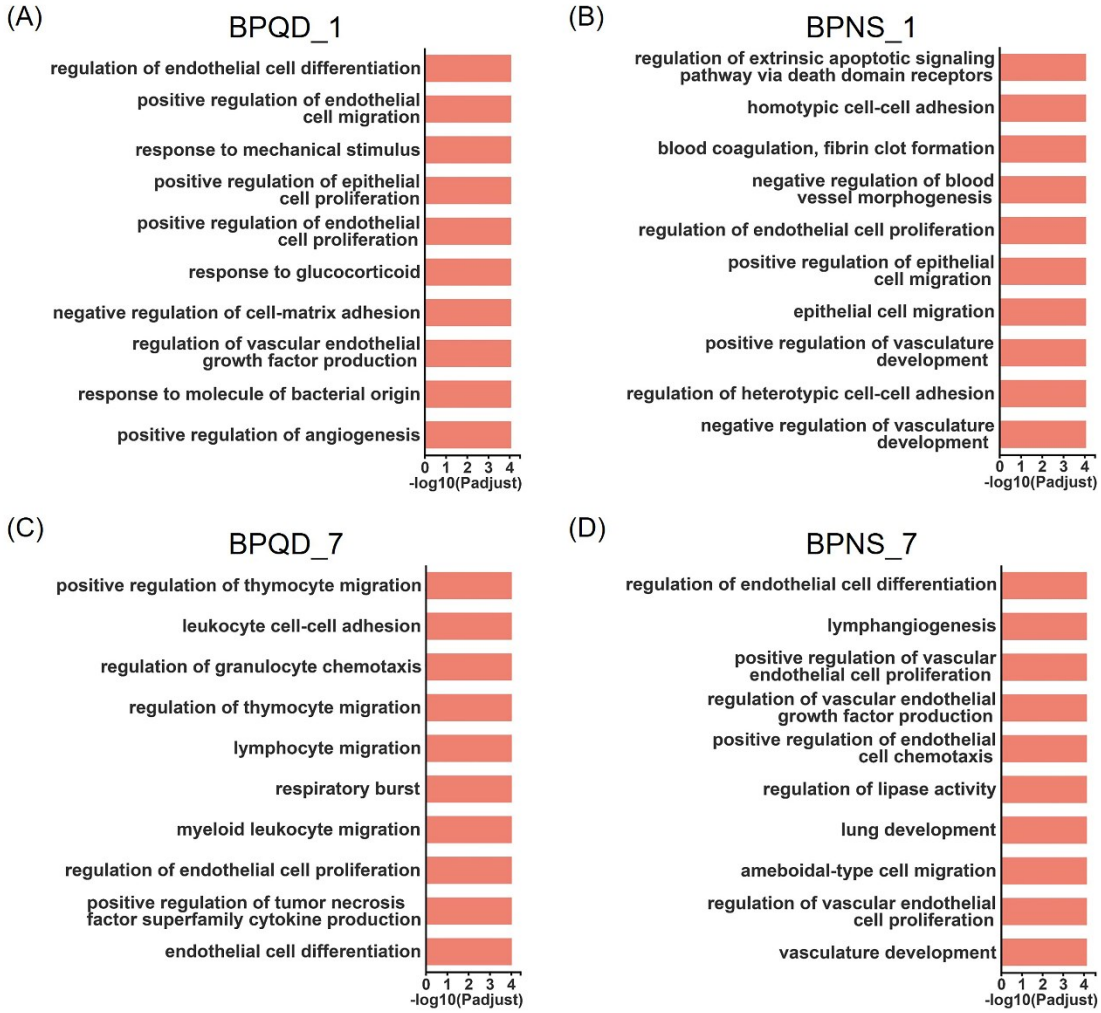

Figure S8. GO enrichment analysis of the endothelial-related DEGs affected by BPQDs (A) or BPNSs (B) 1 day after administration, and by BPQDs (C) or BPNSs (D) 7 days after administration.