**Supplementary Material**

**Combined exposure to fine particulate matter and high glucose aggravates endothelial damage by increasing inflammation and mitophagy: The involvement of vitamin D**

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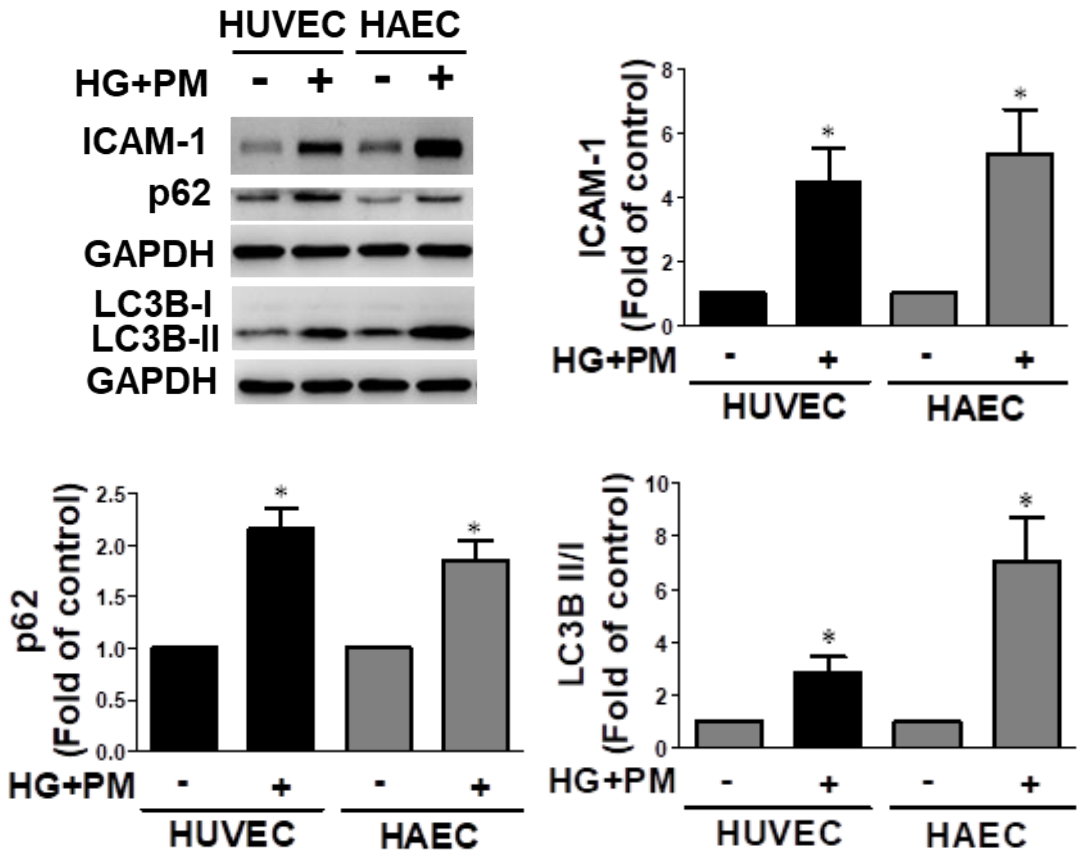
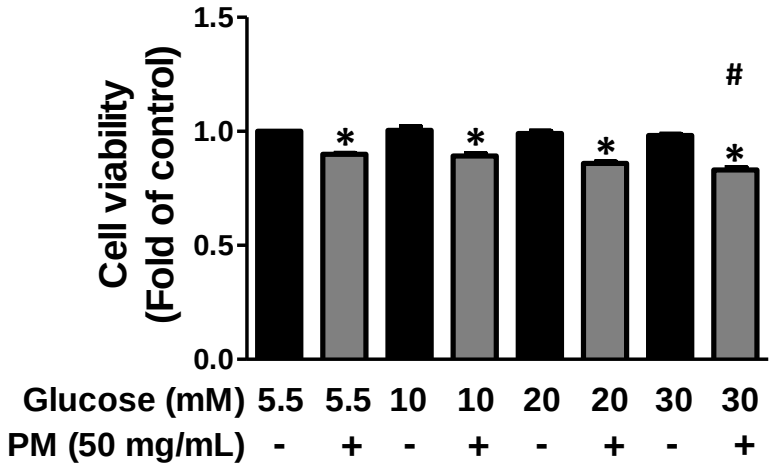
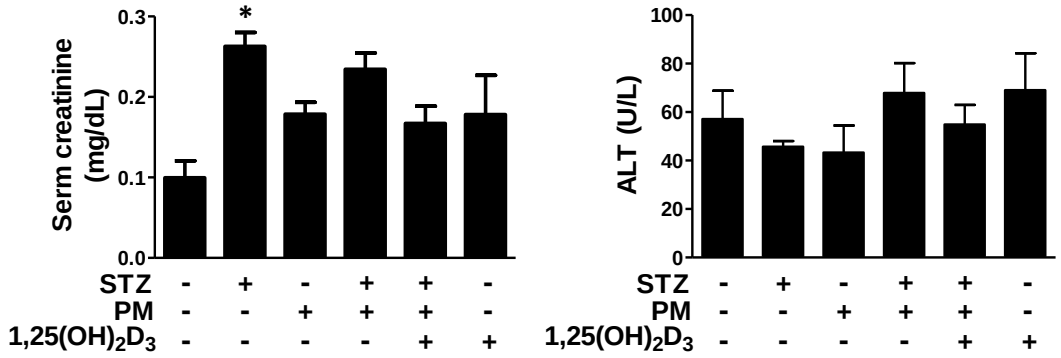



**Supplementary Fig. 1** Effects of combined high glucose and PM exposure on ICAM-1, p62 and LC3B expression in HUVECs and HAECs. HUVECs or HAECs were

pretreated with high glucose (30 mM) for 24 h and then treated with PM (50 μg/mL) for 8 h. The levels of ICAM-1, p62 and LC3B expression were detected using Western blotting. N=5. *P<0.05 compared with the control group.




**Supplementary Fig. 2** The effect of glucose concentration on the viability of PM-treated HUVECs. HUVECs were pretreated with 5.5 mM, 10 mM, 20 mM, and 30 mM glucose for 24 h and then treated with PM (50 μg/mL) for 8 h. Cell viability was assessed using the MTT assay. N=5. *P<0.05 compared with the 5.5 mM, 10 mM, 20 mM, or 30 mM glucose group; $^{\dagger}$P<0.05 compared with the 5.5 mM glucose+PM group or the 10 mM glucose+PM group; $^{\#}$P<0.05 compared with the 20 mM glucose+PM group.




**Supplementary Fig. 3** Biochemical analysis of serum creatinine and ALT. Diabetes was induced in mice by intraperitoneally injecting STZ (55 mg/kg). Mice received PM (10 mg/kg) via intratracheal injection under anesthesia to simulate exposure to air pollution. $1,25(OH)_2D_3$ was administered at a dose of 7 μg/kg daily for two weeks. The levels of serum creatinine and ALT were analyzed. N=7. *P<0.05 compared with the control group.