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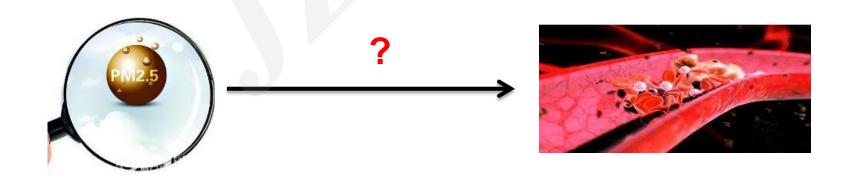
Proteomic analysis of human umbilical vein endothelial cells exposed to PM_{2.5}

Key words: Fine ambient particulate matter (PM_{2.5}), Human umbilical vein endothelial cells (HUVECs), Proteomics, Toxic mechanisms

Research Summary

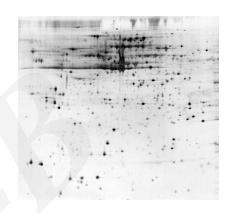
This paper mainly focused on the protein profile of HUVECs treated with PM2.5, and uncovered the molecular mechanisms involved in cardiovascular toxicity of PM2.5. The main results showed as follows:

- PM2.5 altered proteome of HUVECs
- PM2.5 regulated oxidative stress
- PM2.5 promoted DNA damage
- PM2.5 induced apoptosis



Innovation points

- Application of the proteomic technology to explore the mechanism of endothelium cell lesion induced by PM2.5.
- Analysis of differentially expressed proteins with the method of biological procession clustering.
- Emphasis on DNA damage and cell apoptosis are important endpoints in cardiovascular toxicity of PM2.5.







Innovation points

A series of figures were list to show the effect of PM2.5 on promoting DNA damage and apoptosis in HUVECs.

Fig.5 | Flow cytometry analysis of HUVECs by double labelling with Annexin-V fluorescein isothiocyanate (FITC) and Pl.

Fig.6 | Effects of PM2.5 on DNA damage production 8-OHdG of HUVECs after 24 h treatment.

Fig.7 | PM2.5-induced DNA DSBs in HUVECs treated with PM2.5 at 0, 50, 100 $\mu g/mL$.

Fig.8 | Western blot analysis of representative protein of DNA damage repair proteins.