

论著

东北某市大气颗粒物质和多环芳烃类化合物的浓度及其致突变性

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摘要 背景与目的: 调查东北某工业城市大气颗粒物质和多环芳烃类化合物的浓度以及它们的致突变活性。材料与方法: 用大流量粉尘采样器采样, 带有荧光检测仪的高压液相色谱仪(HPLC)检测总的多环芳香烃类化合物(PAHs)以及其中的苯并(a)芘 [B(a)P]的浓度。以Ames沙门氏菌致突变活性检测样品的致突变性。结果: 工业区和交通干道大气中颗粒物质浓度高于居住区或郊区, 工业区大气中颗粒物质中多环芳香烃化合物和苯并(a)芘的浓度高于郊区和交通干道(P<0.05或P<0.01)。工业区大气颗粒物质和有机提取物致沙门氏菌TA98和TA100回复突变率高于其他各区采样点(P<0.05或P<0.01)。结论: 工业区大气中颗粒物质和多环芳香烃类化合物浓度较高, 并具有很高的间接致突变活性和较弱的直接致突变活性。

关键词 [大气污染](#); [颗粒物质](#); [多环芳烃化合物](#); [致突变活性](#); [Ames 试验](#)

Concentrations and Mutagenic Activities of Ambient Particulate Matter and Polycyclic Aromatic Hydrocarbons

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Abstract **BACKGROUND & AIM:** To investigate concentrations and mutagenic activities of ambient particulate matter (PM) and polycyclic aromatic hydrocarbons(PAHs) in an industrial area of northeastern China. **MATERIALS AND METHODS:** The concentrations of PM, PAHs and benzo(a)pyrene [B(a)P] were determined by high liquid chromatography (HPLC) and mutagenicity of the samples were examined by the Ames Salmonella mutagenic assay over two years from September 2000 to August 2002 in a northeast industrial city of China. **RESULTS:** Concentrations of PM, PAHs and BaA were significantly higher in the industrial area than those in the other sampling area(P<0.05 or P<0.01). Mutagenic activities of PM and its extracted organic matters(EOM) were significantly higher in the industrial area than those in the other sampling area (P<0.05 or P<0.01). **CONCLUSION:** Concentrations of PM and PAHs were high in the industrial area, and there were strong indirect mutagenic activities.

Keywords [air pollution](#) [particulate matter \(PM\)](#) [polycyclic aromatic hydrocarbons \(PAHs\)](#) [mutagenic activity](#) [Ames test](#)

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