

论著

用染色体FISH方法检测暴露于不同环境诱变因素居民的吸烟效应

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摘要 背景与目的: 研究包括天然辐射等不同环境诱变因素地区居民的吸烟效应。材料与方法: 外周血来自10名在北京居住超过40年的吸烟居民, 通过使用便携式个人剂量计随身测量24 h所得的剂量估算累积辐射剂量, 通过荧光原位杂交(FISH)方法对北京吸烟居民的外周血淋巴细胞进行染色体易位的分析, 其结果与10名广东高天然本底辐射(高本底)地区吸烟居民, 7名对照地区吸烟居民, 以及北京、高本底地区 and 对照地区的20、15名和16名非吸烟居民的结果进行了比较。结果: 北京、高本底地区 and 对照地区的吸烟居民染色体易位率为(10.6±3.1)% (11.1±3.6)% (13.4±3.4)% 非吸烟居民的为(9.6±5.0)% (11.7±4.7)% (8.4±3.1)% 对照地区的吸烟居民与非吸烟居民的染色体易位率差异有统计学意义(P<0.05, Mann-Whitney U test), 北京和高本底地区的吸烟和非吸烟居民的染色体易位率差异无统计学意义(P>0.05)。结论: 外周血淋巴细胞染色体易位的吸烟效应似乎被北京地区的环境诱变因素或高本底地区高出对照地区的天然辐射所抑制。

关键词 [染色体易位](#); [天然辐射](#); [环境诱变剂](#); [吸烟](#)

Effect of Smoking of Residents Exposed to Different Environmental Mutagens

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Abstract BACKGROUND & AIM: To study the effect of smoking in different areas with different environmental mutagens including natural radiation. **MATERIALS AND METHODS:** Peripheral blood was obtained from 10 smokers who had lived in Beijing for more than 40 years. Individual radiation dose was measured with a pocket dose meter. Chromosomes 1, 2, and 4 were painted for the analysis of translocations. The results were compared with those of 10 and 7 smokers in high background radiation area(HBRA) and its control area(CA), respectively; and 20, 15 and 16 non-smokers in Beijing, HBRA and CA, remote villages, in South China respectively. **RESULTS:** Frequencies of translocation were (10.6±3.1)%, (11.1±3.6)% and (13.4±3.4)% in smokers and (9.6±5.0)%, (11.7±4.7)% and (8.4±3.1)% in non-smokers in Beijing, HBRA and CA, respectively. There was a statistically significant difference (P<0.05, Mann-Whitney U test) in the frequencies of translocation between smokers and non-smokers in CA, but the difference between smokers and non-smokers was neither seen in HBRA or in Beijing. **CONCLUSION:** The effect of smoking seems to be suppressed by the environmental mutagens in Beijing as well as by the elevated level of natural radiation in HBRA.

Keywords [hromosome translocations](#) [natural radiation](#) [environmental mutagens](#) [smoking](#)

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