

亚硫酸氢钠(SO₂)对人血淋巴细胞染色体畸变、姊妹染色单体互换及微核的效应^①

孟紫强, 张连珍

山西大学环境科学系; 太原 030006

收稿日期 修回日期 网络版发布日期 接受日期

摘要 本文研究结果表明,亚硫酸氢钠(二氧化硫)能够引起人血淋巴细胞姊妹染色单体互换(SCE)和微核(MN)率的增加,可使淋巴细胞有丝分裂周期延迟及细胞分裂指数下降,且这些作用有显著的剂量效应关系。结果指出,亚硫酸氢钠在低浓度下仅引起细胞染色单体型畸变,在高浓度下既可引起染色单体型畸变,又可引起染色体型畸变。结果还指出,亚硫酸氢钠对染色体畸变(CA)和MN的诱发效应有明显的个体差异。硫酸钠未能引起上述细胞遗传学效应。这些结果表明,二氧化硫确是人血淋巴细胞染色体断裂剂和基因毒性因子。

关键词 [二氧化硫](#) [亚硫酸氢钠](#) [微核](#) [染色体畸变](#) [姊妹染色单体互换](#) [淋巴细胞](#)

分类号

Chromosomal Aberrations,sister Chromatid Exchanges and Micronuclei Induced in Human Lymphocytes by Sodium Bisulfite (Sulfur Dioxide) ^①

Meng Ziqiang Zhang Lianzhen

1Department of Enviromental Science University Taiyuan 030006

2China Institute for Radiation Protection Taiyuan

Abstract

The frequencies of chromosomal aberrations (CA) ,sister chromatid exchanges (SCE) and micronuclei (MN) in human blood lymphocytes exposed sodium bisulfite (sulfur dioxide) at varies concentrations ranging from 5 X10⁻⁵ to 2X10⁻³ mol/L in vitro were studied . It was shown that sodium bisulfite (NaHSO₃ and Na₂SO₃, 1: 3 mol/L) caused an increase in SCE and MN of human blood lymphocytes in a dose-dependent manner ,and also induced mitotic delays and decreased mitotic index of the lymphocytes. For CA,our results indicated that sodium bisulfite induced an increase of chromatid-type aberrations of the lymphocytes from three of four donors in a dose-dependent manner. The chemical at low concentrations induced chromatid-type aberrations but not chromosome-type aberrations ; at high concentrations induced both chromatid and chromosome-type aberrations of lymphocytes.No cytogenetic effects of sodium bisulfate on the human blood lymphocytes were observed in these assays. The results have confirmed that sulfur dioxide is a clastogenic and genotoxic agent.

Key words [Sulfur dioxide](#) [Sodium bisulfite](#) [Micronuclei](#) [Chromosomal aberrations](#) [Sister chromatid exchanges](#) [Lymphocytes](#)

DOI:

通讯作者

扩展功能	
本文信息	
▶	Supporting info
▶	PDF(433KB)
▶	[HTML全文](0KB)
▶	参考文献
服务与反馈	
▶	把本文推荐给朋友
▶	加入我的书架
▶	加入引用管理器
▶	复制索引
▶	Email Alert
▶	文章反馈
▶	浏览反馈信息
相关信息	
▶	本刊中 包含“二氧化硫” 的相关文章
▶	本文作者相关文章
·	孟紫强
·	张连珍