

培养人淋巴细胞分裂阻滞与常规微核测试法的比较研究 II . 丝裂霉素C的遗传毒性效应

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摘要 为了确定胞质分裂阻滞微核测试法(BC-MNT)的实用价值, 本研究用0.025—0.4μg/mL的丝裂霉素C(MMC)处理培养的人体外周血淋巴细胞, 比较CB-与常远见(C)-MNT检测遗传毒性的敏感性, 结果表明: (1)在整个剂量范围内, 两法测得的微核率(MNF)均有良好的剂量效应关系, 但CB法测得MNF低于常规法, 随剂量增加而加著; CB法测知的最低浓度为0.1μg/ml, 常规法为0.025μg/ml, 可见常规法的敏感性优于CB法; (2)我们首次比较了CB法与常规法所检测微核的平均体积, 发现CB法检测微核的体积接近常规法的3倍, 并提出由于微核形成前后, 微核间及微核与主核间的融合, 导致了微核体积的增大和数量的减少, 进而引起了MNF的下降; (3)CB法检测健康自发MNF明显高于常规法, 这可能是CB法检测低剂量诱变剂效应, 较常规法不够敏感的重要原因之一。最后作者结合文献讨论了CB-与C-MNT的实用价值。

关键词 [微核测试法, 细胞分裂阻滞, 常规法, 人淋巴细胞, 丝裂霉素C](#)

分类号

Comparative Studies of Cytokinesis-block and Conventional Micronucleus Test in Human Lymphocytes Cultured in Vitro II . Genotoxicological Effects of Mitomycin C

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Abstract

The authors have studied genotoxicological effects of MMC by means of CB-and C-MNT to evaluate practical value of CB-MNT. The main results are as follows: (1) In 0.025—0.4μg/ml of MMC MNFs in lymphocytes detected by CB-and C-MNT presented dose-dependent increase, but the MNT detected by C-MNT was higher than that by CB-MNT, this difference became greater as MMC concentrations were increased: The minimum concentrations were 0.1μg/ml for CB-MNT and 0.025μg/ml for C-MNT respectively. Therefore C-MNT is more sensitive to MMC than to CB-MNT; (2) The mean volume of MN detected by CB-and C-MNT was about 3 times as large as that by C-MNT. The authors suggested that the fusion between micronuclei in cytoplasm of CB-cells could lead to increase of MN volume and decrease of MN numbers; (3) In healthy donors the background MNF in lymphocytes detected by CB-MNT was significantly higher than that by C-MNT, it could be one of the reasons that led to the decrease of the sensitivity of CB-MNT to low doses of mutagens. Finally, the practical value of CB- and C-MNT was discussed.

Key words [The micronucleus test](#) [Cytokinesis-block conventional method](#) [Human lymphocyte](#) [Mitomycin C](#)

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