

论著

微核形态用于区分非整倍体毒剂和染色体断裂剂的研究

杨录军, 曹 佳

第三军医大学分子毒理学实验室, 重庆 400038

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摘要 目的:通过比较非整倍体毒剂和染色体断裂剂诱导的各种微核形态类别的差异,探讨以微核形态指标区分两类诱变剂的可能性。方法:对6种标准诱变剂(非整倍体毒剂:秋水仙碱,长春新碱;染色体断裂剂:环磷酰胺,丝裂霉素C,乙基磺酸甲酯, γ 射线)诱导的小鼠骨髓红细胞微核,进行形态学分类分析。结果:①非整倍体毒剂诱导的环形微核率显著高于染色体断裂剂(分别为 $3318 \pm 218, 1714 \pm 813$; $P = 0.003$),而圆形微核率显著低于后者(分别为 $5116 \pm 615, 7213 \pm 911$; $P < 0.0001$),肾形微核率有高于染色体断裂剂诱导的微核的趋势,但差别无显著性(分别为 $1416 \pm 617, 1012 \pm 613$, $P = 0.07$);两类诱变剂诱导的3种类别的微核95%可信区间差异很大,其中圆形微核率和环形微核率完全分离;②得到通过微核形态区分两类诱变剂的判别方程。结论:微核的圆形、环形和肾形的发生率可用于区分非整倍体毒剂与染色体断裂剂的参考。

关键词 [微核](#) [非整倍体毒剂](#) [分类法](#) [判别分析](#)

STUDY ON THE FREQUENCIES OF MICRONUCLEUS MORPHOLOGICAL CLASS AS A MEANS TO DISTINGUISH ANEUGENS FROM CLASTOGENS

YANG Lu - jun , CAO Jia

Molecular Toxicology Laboratory , Third Military Medical University , Chongqing 400038 , China

Abstract Purpose : To study the morphological method to distinguish aneugens from clastogens. Methods : According to the morphological criteria micronuclei were classified and quantitatively analyzed induced by six reference mutagens (aneugens : colchicine , vincristin ; clastogens : cyclophosphamide , mitomycin C , ethyl methane sulfonate , gamma - ray) . Results : In comparing with the results by clastogens , the frequency of circle micronuclei by aneugens was significantly increased($P = 0.003$) , ring micronuclei remarkably decreased ($P < 0.0001$) , and crescent micronuclei did not change evidently ($P = 0.07$) . The 95 % confidence intervals of the mean micronucleus frequencies in class between the two types of mutagens were different very much , of which circle and ring frequencies were completely separate. A discriminating function was acquired from the paper data. Conclusion : The frequencies of circle , ring and crescent micronuclei can be as a means to distinguish aneugens and clastogens.

Keywords [micronucleus](#) [aneugen](#) [classification](#) [discriminating analysis](#)

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通讯作者 杨录军 yanglj@yahoo.com

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