

论著

# 五种氯化有机物对V79细胞DNA 损伤作用的研究

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**摘要** 本文采用近年来发展的单细胞凝胶电泳试验检测了二氯甲烷、三氯甲烷、四氯化碳及一氯乙酸和三氯乙酸对V79细胞的DNA 损伤作用。结果显示:五种受试物均可引起体外培养的V79细胞DNA 损伤,但其作用强度差异很大。其顺序为四氯化碳> 三氯甲烷> 二氯甲烷> 一氯乙酸> 三氯乙酸。该结果还提示:五种氯化有机物对V79细胞的毒性及DNA 损伤作用的大小顺序是一致的,氯化烷基类化合物的细胞毒性及DNA 损伤作用均大于氯乙酸类,在氯化烷基类化合物中,其DNA 损伤作用是随化合物中氯原子数目的增加而增强的。

**关键词** [氯化有机物](#) [单细胞凝胶电泳](#) [DNA 损伤](#) [V79细胞](#)

## STUDY ON THE DNA DAMAGE OF FIVE CHLORINATED ORGANIC COMPOUNDS IN V79 CELLS

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**Abstract** In this paper , the DNA damage effect s of carbon tet rachlororide , t richloromethane ,dichloromethane , chloroacetic acid and t richloroacetic acid were studied using the single cell gel elect rophoresis technique ( comet assay) in V79 cells cultured in vit ro. The result s showed that all test substances , except trichloroacetic acid , exhibited a clear and reproducibile linear dose2dependent increase in DNA migrtion. The DNA breakage capacity and the cytotoxicity of this chemicals have the same order : carbon tet rachlororide >t richloromethane > dichloromethane > chloroacetic acid > t richloroacetic acid. The data also suggested that DNA breakage capacity and the cytotoxicity of the chemicals of chlorinated alky1 were st ronger than that of the kind of chloroacetic acid. Among the chemicals of chlorinated alky1 , the DNA breakage capacity increased with increasing in the number of chlorine substitution.

**Keywords** [Chlorinated organic compound](#) [Single cell gel elect rophoresis](#) [DNA damage](#) [V79 cell](#)

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