

论文

三尖杉酯碱对小鼠白血病L-1210细胞和正常骨髓干细胞的影响

樊亦军;韩锐

\*广西医药研究所;中国医学科学院药物研究所,北京

摘要:

用放射自显影技术观察了三尖杉酯碱对小鼠白血病L-1210细胞周期的影响。氚标记的胸腺嘧啶脱氧核苷脉冲标记试验证明,接种后第6天的L-1210细胞的一代周期时间( $T_C$ )为15.8小时,其S期( $T_S$ ), $G_1$ 期( $T_{G_1}$ ), $G_2$ 期( $T_{G_2}$ )及M期时间( $T_M$ )分别为10.7,2.0,2.7,0.4小时。腹腔注射三尖杉酯碱30 $\mu$ g/只一次,L-1210细胞的有丝分裂指数(MI)明显降低,其标记指数(LI)及每个细胞的标记颗粒数也明显减少,由S期向 $G_2$ 及M期移行时间延长。鉴于三尖杉酯碱的限制性毒性为骨髓抑制,我们用脾集落形成试验(CFU-S)研究了三尖杉酯碱对CFW纯种小鼠骨髓干细胞的影响。实验表明,三尖杉酯碱的剂量小于0.5mg/kg时,对骨髓干细胞无明显影响。当剂量高于此剂量时,三尖杉酯碱对骨髓干细胞的杀伤呈剂量依赖性。实验证明,人参皂甙对三尖杉酯碱的骨髓毒性有一定保护作用。

关键词:

THE EFFECT OF HARRINGTONINE ON THE CELL CYCLE OF L-1210 CELLS AND THE BONE MARROW STEM CELLS IN MICE

Fan Ijun and Han Rui

Abstract:

By use of autoradiographic method the duration of the cell cycle of L-1210 leukemic cells and the effect of harringtonine on the cell cycle of the leukemic cells in mice were studied. The  $T_C$  of L-1210 cells on the 6th day after transplantation was 15.8 hours, and the  $T_S$ ,  $T_{G_1}$ ,  $T_{G_2}$ ,  $T_M$  were 10.7, 2.0, 2.7, 0.4 hours, respectively.

Under the action of harringtonine the duration of S phase of the leukemic cells was prolonged and the mitotic index was lowered after 5 hours of the administration of the drug. The labelled index of the cell population and the average grain counts per cell by the  $^3H$ -TdR of the treated leukemic cells were lowered significantly. These results suggest that the DNA synthesis was inhibited profoundly after the treatment with harringtonine. By means of the spleen colony assay technique the action of harringtonine on normal bone marrow stem cells was investigated. It was revealed that when the dosage of harringtonine was lower than 0.5 mg/kg no effect on the stem cells was found, while a dosage dependent effect on the survival rate of colony-forming unit in spleen was noted when the dosage was more than 0.5 mg/kg. It is

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