

论文

关于抗肿瘤药物的研究 III. 利用体外培养吉田腹水肉瘤筛选抗肿瘤药物

朱天錫; 吴云翼

中国医学科学院药物研究所, 北京; \*中国科学院药物研究所

摘要:

本文介绍利用短期体外培养吉田腹水肉瘤细胞进行药物筛选的方法. 所用培养基为马血清平衡盐溶液, 每毫升接种细胞数为6—10万, 于加入药物后24-48小时进行细胞计数, 计算药物对细胞生长的抑制百分率, 并以形态观察作为辅助指标. 曾进行5种已知抗肿瘤药的敏感试验, 发现药物的作用强度为: 氮芥>氧化氮芥>新恩必恨>丁二醇二甲磺酸酯(myleran)>6-巯基嘌呤. 此外, 过筛了24种合成药和93种天然药物成分, 其中有作用者分别为41.7%和38.7%. 将筛选结果与动物瘤体内结果作比较, 发现二者间有一定的相关. 最后对方法的优缺点进行了讨论.

关键词:

STUDIES ON ANTITUMOR DRUGS III. THE USE OF *IN VITRO* CULTIVATION OF YOSHIDA ASCITES SARCOMA CELLS IN SCREENING ANTI-TUMOR SUBSTANCES  
CHU TIEN-HSI AND WU YUEN-I

Abstract:

A simple and rapid method is described whereby short-term suspension culture of Yoshida ascites sarcoma cells may be used as a screening tool for anti-tumor substances. The tumor cells were cultivated in a medium consisting of horse serum and Hanks' balanced salt solution; sixty thousand to one hundred thousand cells per ml were used as the initial inocula. Cell-counts were carried out at 24 and 48 hours after addition of the drug and the record of the effect of the drugs was graded mainly with reference to the per cent inhibition of the tumor cells. In addition, cytomorphological changes were also noted as complementary criteria. The response of this test system was assessed first by exposing it to five known anti-tumor agents, and it was observed that these compounds exhibited a varying antitumor activity against the cultured cells. In decreasing order of effectiveness they were listed as follows: HN<sub>2</sub>, nitromin, novoembichinum, myleran and 6-mercaptopurine. Moreover, 117 drug preparations had been screened with this technique. The results indicated that 41.1% of the 24 synthetic compounds and 38.7% of the 93 extracts of natural medicines were found to be active. As regards the comparison of these *in vitro* results with the *in vivo* antitumor effects of the same substances in tumor-bearing animals, it was pointed out that there was some, though not perfect, correlation between these two biological test systems. A discussion on the usefulness of this technique as a large scale cancer chemotherapy screening procedure had been made, and its limitations were also presented.

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