

论文

抗肿瘤药物的研究 X IV. 锑胺螯合物化学结构与疗效间关系的探讨

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摘要:

锑胺螯合物是本所发现的新型抗肿瘤药物,本文继续探讨此类化合物的化学结构与疗效之间关系。发现:(1)锑与5种不同类型的胺螯合剂结合的制剂,例如EDTA-Sb(I)和PDTA-Sb(IV)的不同盐类,N取代的EDTA-Sb(II),ATA-Sb(Va)及其类似物(VII)和GDTA-Sb(IXf)对小鼠Ehrlich腹水瘤均有明显的抑制作用,其中乙二胺四乙酸锑丙基铍盐和对氧氮六环盐的疗效较其钠盐为佳。(2)汞、铋、铅、锌、锰、铜、钴、镍、锡和钼10种金属胺螯合物(III, V及VIII)及EDTA,PDTA和ATA对Ehrlich腹水瘤和肉瘤180均无疗效。(3)EDTA-Sb-Na,PDTA-Sb-Na和ATA-Sb对肉瘤180稍有抑制作用。(4)锑胺螯合物抗癌作用的基本结构可能为一个含锑的螯合物分子中拥有以氮为中心而具有三个以上的羧甲基。

关键词:

STUDIES ON ANTITUMOR DRUGS X IV. EXAMINATION ON STRUCTURE-ACTIVITY RELATIONSHIPS OF ANTIMONIAL CHELATES

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Abstract:

Since the discovery of antitumor activity of Sb-57 and Sb-71, about 50 analogs of them have then been tested in mice bearing Ehrlich ascites carcinoma or sarcoma 180. The main results were as follows: 1. The antimonial chelates of five complexones exhibited marked inhibiting action on Ehrlich ascites carcinoma in mice. They were the salts of EDTA-Sb (table 6- I ) and PDTA-Sb (IV), N-substituted analogs of EDTA-Sb (II), ATA-Sb (Va) and antimonial derivatives of its analogs (VII), and CDTA-Sb (IXf). Among these compounds the propylamine salt and morpholine salt were more potent than the others (such as sodium salt). 2. Ten kinds of metal complex (Hg, Bi, Pb, Zn, Mn, Cu, Co, Ni, Sn and Ba) of ATA and EDTA (III, V and VIII) were prepared and examined for their activities, but none of them showed any inhibitory action on experimental tumors. The chelating agents (EDTA, PDTA and ATA etc.) alone also had no therapeutic effect on Ehrlich ascites carcinoma or sarcoma 180 in mice. 3. EDTA-SbNa, PDTA-SbNa (Sb-57) and ATA-Sb (Sb-71) produced a slight inhibition on the growth of sarcoma 180. The chemical feature and pharmacologic effect of antimonial chelates of EDTA and ATA are also discussed in this paper.

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