

论文
抗癌活性络合物[Fe(II)- 平阳霉素]的溶液态构型及活化机理研究

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摘要:

关键词: 平阳霉素 铁络合物 ¹HNMR 顺磁效应

CONFIGURATION IN SOLUTION AND ACTIVITY MECHANISM STUDIES ON THE ANTICANCER Fe(II)-PINGYANGMYCIN(PYM) COMPLEX

Jiang Junping; Guo Ying and Zhou Xiao

Abstract:

In order to elucidate the micro-configuration and mechanism of anticancer activity of Fe(II)-PYM complex in solution, the coordination of high spin paramagnetic ferrous ion, Fe(II), and Pingyangmycin, (PYM) was studied in D₂O solution by using the paramagnetic ion probe principle and PMR technique and compared with the inactive complexes, e.g., Cu(II)-PYM and Fe(III)-PYM. The basic configuration parameter of the complexes were determined. When the pyrimidine methyl proton was close to the central ion, 6.5×10⁻¹⁰ m was taken as standard, the absolute distance between the central ion and other protons or ligand could be calculated. Results showed that, in Fe(III) solution, the proton of pyrimidine methyl and the terminal acyl group of the sugar moiety were closer to the central ion, but other protons were relaxed and the distance was between 7.0×10⁻¹⁰ m and 15×10⁻¹⁰ m. In the case of Fe(II) complex, the distance of the central ion and the ligand group was between 4.91×10⁻¹⁰ m and 8.85×10⁻¹⁰ m. The distinctive structure diversity with those of inactive complexes was observed and the relationship of the activity mechanism was postulated.

Keywords: Iron complex ¹HNMR Paramagnetic effect Pingyangmycin

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