

论文

几种血卟啉衍生物对肿瘤细胞光动力学灭活作用的比较

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摘要:

本文用小鼠L₁₂₁₀淋巴白血病细胞和B₁₆黑色素瘤细胞研究了几种国内试制的血卟啉衍生物制剂对肿瘤细胞的光动力学灭活作用。与国外新一代血卟啉衍生物Photofrin II (DHE)相比,LF-019和扬州光卟啉(Y-HPEI)的活性更显著。本文采用了Trypan blue排斥试验与注射瘤细胞后观察小鼠存活时间两种评价药物作用的方法,发现两者的结果是一致的。

关键词: 血卟啉衍生物 光动力学灭活作用 细胞培养

A COMPARATIVE STUDY ON THE PHOTODYNAMIC INACTIVATION OF TUMOR CELLS IN THE PRESENCE OF SEVERAL HEMATOPORPHYRIN DERIVATIVES

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Abstract:

The photodynamic effect of several newly prepared hematoporphyrin derivatives (HPDs) on L₁₂₁₀ and B₁₆ cells *in vitro* was compared. The cells pretreated with HPDs were exposed to black light and cellular viability was determined by trypan blue exclusion assay. Photofrin II (DHE), a new kind of commercial HPD, was used as a positive control. The results showed that the photodynamic effect of tested HPDs, LF-019, Y-HPD and HA-308 were more potent than that of DHE. The 50% inhibiting concentration (IC₅₀) for DHE was 8.2 µg/ml when the treated B₁₆ cells were exposed to the light for 10 min. However, the IC₅₀ for LF019, Y-HPD and HA-308 were 2.5, 5.3 and 6.2 µg/ml respectively. The effect of LF-019 was 3 times that of DHE. In order to test the reliability of the trypan blue exclusion assay for evaluating the cell killing, the survival times of DBA/2 mice received 1×10⁶ L₁₂₁₀ cells treated with HPDs plus light were measured. The results from these two assays were found to be in good agreement.

Keywords: Photodynamic inactivation Cell culture Hematoporphyrin derivatives

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