

研究报告

血管抑素的¹³¹I标记及其对小鼠A549移植瘤治疗作用的观察

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摘要 目的: 从人血浆中分离血管抑素 (Angiostatin, AS), 并用¹³¹I标记, 观察¹³¹I- AS对荷A549移植瘤小鼠的治疗效果。方法: 采用一步法从人血浆中分离AS, 并用L-Lysine Sepharose 4B亲和层析柱作亲和层析纯化, 将提纯的AS用Iodogen固相法进行¹³¹I标记, 分析¹³¹I-AS 的标记率、比活度, 并对其体外稳定性进行评价。32只荷A549肺癌移植瘤的裸鼠随机分为4组, 腹腔注射¹³¹I- AS (含¹³¹I 11.1MBq, AS12.5mg/Kg)、¹³¹I (11.1MBq)、AS (12.5mg/Kg) 和生理盐水0.3mL, 1次/周, 治疗四周, 观察28天内肿瘤体积的变化。结果: ¹³¹I- AS标记率为77.8~86.7%, 比活度为1.28~3.96MBq/ug。标记产物体外-20℃存放7天, 放化纯度降至原来的72%。治疗28天后, ¹³¹I- AS组、¹³¹I组、AS组和生理盐水组小鼠肿瘤的体积分别是 (1956±98mm³)、(5284±123mm³)、(3948±115mm³)、(7350±153mm³)。结论: Iodogen法标记获得的¹³¹I-AG 标记率、比活度和稳定性较高。¹³¹I- AS能较强烈地抑制小鼠体内移植肿瘤的生长, 其抑制作用优于单纯应用等浓度的AS及¹³¹I, ¹³¹I- AS在治疗肿瘤中有潜在的应用前景。

关键词 [血管抑素](#) [¹³¹I](#) [同位素标记](#) [肺肿瘤](#) [治疗](#)

分类号

Labelled angiostatin with ¹³¹I and observed its antitumor effect on nude mice xenografts .

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Abstract [Abstract] Objective To purify angiostatin from human plasma ,label it with ¹³¹I ; to observe the therapeutic effects of ¹³¹I-angiostatin on transplanted A549 lung carcinoma in nude mice and investigate the clinical prospect of ¹³¹I-angiostatin for solid tumor. Methods Salvage angiostatin from human plasma through limited proteolysis by elastase ,and purify it by L-Lysine-Sepharose 4B affinity chromatograph, and labeled angiostatin with ¹³¹I using method of conventional Iodogen and assessed in labeling efficiency, specific activity and in vitro stability . 32 male nude mice (the mean diameter of tumors transplanted into the right forelimbs was about 1cm)whose forelimbs were transplanted with A549 lung carcinoma were treated with ¹³¹I-angiostatin (¹³¹I 11.1 MBq per mouse, angiostatin 12.5mg/Kg), ¹³¹I(11.1 MBq per mouse),angiostatin(12.5mg/Kg) respectively and with similar normal saline (NS) 0.3mL as control. Each drug was given intraperitoneally and injected for four times at an interval of 7 days respectively .The volume of tumors was measured during 28 days after treatment. Results The labeling efficiency ranged from 77.8% to 86.7% , the specific activity could reach up to 1.28~3.96MBq/ug. The radiochemical purity of ¹³¹I-Angiostatin reduced to 72% after 7 days in vitro storage (-20℃). The mean volume of transplanted tumors in the mice with A549 lung carcinoma was (1956±98mm³)、(5284±123mm³)、(3948±115mm³)、(7350±153mm³) after treated with ¹³¹I-angiostatin, ¹³¹I,angiostatin and NS respectively .Conclusions The conventional Iodogen method was a high efficiency iodination of angiostatin , and the labeling efficiency, specific activity and in vitro stability were good .¹³¹I-angiostatin can inhibit the growth of transplanted of A549 lung carcinoma in mice ,and its inhibitive effect is better than ¹³¹I or angiostatin .So it is suggested that ¹³¹I-angiostatin has potential prospect of clinical application in the treatment of solid tumor.

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Key words [Angiostatin, Iodine ,Radioisotopes labeling,lung carcinoma ,treatment](#)

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