

论著

纳米活性炭对顺铂抗肿瘤作用的影响

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摘要 目的 观察纳米活性炭 (ACN) 与顺铂合用对顺铂抗肿瘤作用及荷瘤小鼠免疫功能的影响。方法 采用平板克隆形成法初步观察ACN对顺铂抑制人胃癌BGC823细胞克隆形成的影响; 制备荷S180肉瘤和H22肝癌小鼠模型, 观察ACN对顺铂抑制移植瘤生长的影响; 采用ELISA法检测脾细胞培养上清IgG水平; 采用流式细胞术检测脾T淋巴细胞亚群。结果 ACN单独应用对BGC823细胞克隆形成无明显影响, 与顺铂合用则明显增强顺铂对BGC823细胞克隆形成的抑制作用, 也明显增强顺铂对S180肉瘤及H22肝癌移植瘤生长的抑制作用; 与顺铂组相比, ACN与顺铂合用明显提高脾细胞培养上清IgG水平, 使CD4⁺细胞百分比明显升高, CD8⁺细胞百分比明显下降, 从而使CD4⁺/CD8⁺比值明显升高。结论 ACN对顺铂抗肿瘤作用具有明显的增效作用, 同时对荷瘤小鼠的细胞免疫和体液免疫反应均有一定的改善作用。

关键词 [炭](#) [纳米结构](#) [顺铂](#) [肿瘤](#) [免疫](#)

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Effects of activated charcoal nano-particles on anti-cancer action of cisplatin

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Abstract

AIM To observe the effect of activated charcoal nano-particles (ACN) combination with cisplatin on the anti-cancer action of cisplatin and the immune function of the mice with cancer. **METHODS** Flat plate clone formation was adopted to evaluate the effect of ACN on the inhibitory action of cisplatin on clone formation of BGC823 cells. The effect of ACN on the inhibitory action of cisplatin on tumor growth was evaluated by constructing S180 carcinoma, H22 hepatoma transplantation tumor model. ELISA was used to evaluate the effect of ACN on IgG level in the culture supernatant of spleen cells. Flow cytometry was used to evaluate the T cell subpopulation of spleen cells. **RESULTS** ACN had an obvious synergistic effect on the inhibitory action of cisplatin on clone formation of BGC823 cells and on the growth of S180 carcinoma and H22 hepatoma. ACN obviously raised the level of IgG in the culture supernatant of spleen cells, and also heightened the CD4⁺ T cell percentage, decreased the CD8⁺ percentage, thereby obviously heightened the CD4⁺/CD8⁺ ratio. **CONCLUSION** ACN can enhance the anti-cancer action of cisplatin and improve the immune function of the mice with cancer.

Key words [charcoal](#) [nanostructures](#) [cisplatin](#) [neoplasms](#) [immunity](#)

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