



588-594. 活体荧光成像评估Ag85A和Ag85B DNA疫苗对小鼠膀胱癌移植瘤的疗效[J]. 付奎, 杨晓峰, 汪海龙, 杨彬, 王炜, 王晔, 刘晶. 中国肿瘤生物治疗杂志, 2009, 16(6)

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基金项目: 山西省科技攻关基金资助项目 (No. 20090321022)

DOI: 10.3872/j.issn.1007-385X.2009.6.007

摘要:

目的: 运用活体红色荧光成像技术及影像学特征评估Ag85A DNA 疫苗和Ag85B DNA 疫苗对膀胱癌的免疫治疗效果。方法: 构建稳定转染香菇珊瑚红色荧光蛋白 (discosomasp red fluorescent protein, DsRed) 基因的小鼠膀胱癌BTT细胞 (BTT DsRed), 建立BTT DsRed细胞移植瘤小鼠模型, 将建模成功的24只小鼠随机分为pVAX1 Ag85A DNA 疫苗组、pVAX1 Ag85B DNA 疫苗组和生理盐水治疗组, 各组分别于肿瘤细胞接种后的第6天肌肉注射pVAX1 Ag85A、pVAX1 Ag85B及生理盐水, 然后用活体荧光成像系统检测移植瘤的生长和转移情况。结果: 成功制备了稳定转染 DsRed 基因的BTT DsRed细胞, BTT DsRed接种小鼠建立可视化红色荧光膀胱癌移植瘤模型。重组质粒pVAX1 Ag85A和pVAX1 Ag85B治疗后的第2周, 活体荧光成像显示pVAX1 Ag85B 治疗组小鼠肿瘤荧光强度明显低于生理盐水组 (P <0.05); 治疗后第3周, pVAX1 Ag85A 和pVAX1 Ag85B组小鼠肿瘤荧光强度都明显低于生理盐水组 (P <0.01), 但pVAX1 Ag85B 与pVAX1 Ag85A组无明显差别 (P >0.05); pVAX1 Ag85B 组小鼠淋巴转移率 (25.0%) 明显低于生理盐水组 (87.5%, P <0.01) 和pVAX1 Ag85A组 (62.5%, P <0.05)。结论: 应用活体红色荧光成像技术能够动态、灵敏、可视化地评估 DNA 疫苗对小鼠膀胱癌移植瘤的疗效; Ag85A和Ag85B DNA 疫苗均具有抗肿瘤免疫疗效。

关键词: [Ag85A](#) [Ag85B](#) [DNA疫苗](#) [膀胱肿瘤](#) [活体荧光成像](#) [香菇珊瑚红色荧光蛋白](#)

In vivo fluorescence image analysis system in assessing efficacies of pVAX1 Ag85A and pVAX1 Ag85B DNA vaccines in treatment of bladder cancer cell implanted tumors in mice [Download Fulltext](#)

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Fund Project: Supported by the Scientific and Technological Project of Shanxi Province (No. 20090321022)

Abstract:

Objective: To use in vivo fluorescence image analysis system for evaluating the efficacies of pVAX1 Ag85A and pVAX1 Ag85B DNA vaccines in treatment of bladder cancer cell implanted tumors in mice. Methods: Discosomasp red fluorescent protein (DsRed) stably transfected bladder cancer BTT cell line (BTT DsRed) was established and BTT DsRed cell implanted mouse model was constructed. Six days later, 24 BTT DsRed bearing mice were randomly divided into pVAX1 Ag85A DNA vaccine group, pVAX1 Ag85B DNA vaccine group, and saline group through injecting the pVAX1 Ag85A, pVAX1 Ag85B, and saline into the right hind limbs of mice, respectively. The growth and metastasis of implanted BTT DsRed tumors were examined by in vivo fluorescence image analysis system. Results: BTT cell line stably transfected with DsRed (BTT DsRed) was successfully established. Fluorescence visible mouse model was successfully established by inoculating BTT DsRed cells into hind limbs of mice. After treatment with pVAX1 Ag85A or pVAX1 Ag85B for 2 weeks, the in vivo tumor fluorescence intensity in pVAX1 Ag85B group was significantly lower than that in the saline group (P <0.05). After 3 weeks, tumor fluorescence intensities in both pVAX1 Ag85A and pVAX1 Ag85B groups were significantly lower than that in the saline group (P <0.01). But the efficacies of pVAX1 Ag85A and pVAX1 Ag85B groups were similar (P >0.05). The distant lymphatic metastasis rate in pVAX1 Ag85B group was significantly lower than those in the saline (25.0% vs 87.5%) and pVAX1 Ag85A groups (25.0% vs 62.5%) (P <0.05). Conclusion: In vivo fluorescence image analysis system can dynamically, sensitively and visually evaluate the anti tumor effects of DNA vaccines against bladder cancer cell implanted tumors. Both pVAX1 Ag85A and pVAX1 Ag85B DNA vaccines have anti tumor effects for bladder cancers.

Keywords: [Ag85A](#) [Ag85B](#) [bladder neoplasms](#) [in vivo fluorescence image](#) [discosomasp red fluorescent protein](#)

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