基础研究

乳腺癌细胞MDA-MB-231肺转移模型的建立及其评价

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摘要：

的：探讨用绿色荧光蛋白（GFP）标记的乳腺癌细胞MDA-MB-231建立可量化评估的自发性肺转移和实验性肺转移动物模型，为研究乳腺癌的转移机制提供依据。方法：采用慢病毒载体介导的病毒包装体系，获得稳定表达GFP的细胞系MDA-MB-231-GFP，通过皮下注射方式将细胞接种于Balb/C裸鼠皮下，建立自发性肺转移模型，通过尾静脉注射方式将细胞接种到重症联合免疫缺陷（SCID）小鼠体内，建立实验性肺转移模型，分别于8周和5周后处死小鼠，取肺组织于体视显微镜下观察。结果：自发性肺转移小鼠接种细胞8周后，原位形成直径约为15 mm的肿瘤块；处死小鼠后肺部大体标本未见结节状转移灶，但488 nm激发光下见转移灶呈绿色点状分布。实验性肺转移小鼠接种细胞5周后处死小鼠，肺部形成的转移灶肉眼不可见，但在488 nm激发光波长下同样呈现绿色点状分布。肺转移灶易于观察和统计。结论：成功建立了可以量化的MDA-MB-231细胞肺转移动物模型。

关键词：　乳腺肿瘤；　　慢病毒体系；　　肺转移；　　动物模型

Establishment and evaluation of mouse model for lung metastasis of　breast cancer cell MDA-MB-231

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Abstract:

Abstract:Objective To establish quantifiable primary and experimental lung metastasis mouse models by using GFP labeled MDA-MB-231 cell lines and provide basis for the study on metastasis mechanism of breast cancer. Methods The MDA-MB-231 cells were infected by GFP labeling lentiviral vector-mediated packaging system and inoculated subcutaneously into Balb/C nude mice or through tail vain into SCID mice to set up primary and experimental lung metastasis models.Then the mice were executed at 8 th and 5 th weeks,and the lungs were extracted and analyzed by stereomicroscope. Results 8 weeks after the cells were inoculated in primary lung metastasis mice,the tumor in situ was observed with the diameter of 15 mm. The metastasis foci in the lung were invisible to naked eye,but were visible at 488 nm excitation wavelength with green fluorescence. 5 weeks after the cells were injected in experimental lung metastasis mice,the metastasis foci were still invisible to naked eye,but were clearly visible at 488 nm excitation wavelength with green fluorescence,which were easy to be observed and calculated. Conclusion The mouse model for lung metastasis using MDA-MB-231 cells with countable green fluorescence foci is successfully established.

Keywords: breast neoplasm;lentivirus system;lung metastasis;animal model

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