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Establishment of Orthotopic Lewis Lung Cancer Model in Mouse

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摘要

Background and objective The mouse lung cancer orthotopic model includes spontaneous lung cancer model and endotracheal transplanted model, and etc. The spontaneous lung cancer needs longer time and does not ensure the rate of the generation of the tumor; as for endotracheal transplanted model, the position and size of the tumor are instable. In this study, the 3LL cell line was orthotopically transplanted into the lung of the C57BL/6 mice, compare to the heterotopic model, to discuss their stability and transfer-characteristics. And this study was also to optimize the method of establishing lung cancer orthotopic animal model. Methods Different quantity of 3LL cells were inoculated into the left oxter of C57BL/6 mice to establish the heterotopic model; or suspended with Matrigel then inoculated into the left lung of C57BL/6 mice to establish orthotopic model. The survival-time of the mice was examined. The tissue was collected for the subsequent histology assay after euthanizing the mice. Microvessels density (MVD) was observed and counted by immunohistological chemistry. CD44v was detected by flow cytometry. Results TTumor-form-rate of the heterotopic group were 100%, 66.7%, 16.7%, respectively, and had no macroscopic transfer. Tumor-form-rate of the orthotopic group were 100%, 100%, 83.3%, respectively, and had widespread transfer in contralateral chest and the lung. The median survival time of the orthotopic group (38, 35, 23 days) were less than the heterotopic group (82, 72, 50 days). MVD of the orthotopic group (120.2±9.73) was higher than the heterotopic group (92.6±7.12). The expression of CD44v of orthotopic (26.46± 1.56)% was higher than the heterotopic group (23.13±1.02)%. Conclusion The lung cancer orthotopic model which established by 3LL cells transplanted into the lung of the mice is simple, dependable, repeatable and has stronger transfer characteristics than the heterotopic model.

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