

Establishment of an orthotopic non-small cell lung cancer model in nude mice.

建立裸鼠非小細胞肺癌原位癌模式及探討

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Lung cancer ranks first among the top ten cancer mortality rates globally. In Taiwan, it ranks high among cancer-related fatalities, with approximately one in five cancer cases leading to lung cancer-related deaths. In 2021, 32 people in Taiwan succumbed to lung cancer daily. Non-small cell lung cancer is one of the major subtypes of lung cancer, accounting for 85% of lung cancer. Currently, there are no effective treatment methods available. Choosing the right animal model was crucial for establishing the disease model. The immunodeficient mice like NSG and SCID mice are commonly used in tumor model, but they are expensive and have fur, which can affect IVIS imaging. Therefore, we opted for BALB/c nude mice, which overcame these issues and allowed for easier observation of clinical effects caused by lung cancer. This study aimed to create a lung cancer model by intravenous injection in BALB/c nude mice. The mice were split into two groups: control (n=2) and A549-luc-c8 group (n=6). We achieved a 100% success rate in establishing the lung cancer model. The mice exhibited clinical symptoms similar to lung cancer patients, with IVIS imaging bioluminescent intensity in the lung area of 4 of 6 and in the sacral position of 4 of 6. The gross pathology observed that lung nodules in 5 of 6 and tumor nodules around the sacral vertebrae in 4 of 6. The IVIS imaging showed bioluminescent intensity in the lung area of 4 of 6 and in the sacral position of 4 of 6. We have successfully established nude mice non-small cell lung cancer model by intravenous route, which is a more favorable for future lung cancer-related research.

Key Word: Lung cancer, orthotopic lung cancer model, A549-luc-c8.