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携带LacZ基因腺病毒载体示踪大鼠上肢神经通路的研究 [点此下载全文](#)

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摘要:

目的: 经外周导入携带LacZ基因腺病毒载体(AdLacZ), 示踪大鼠尺神经、正中神经轴突及其靶运动和感觉神经元。方法: 经尺神经或正中神经近断端导入AdLacZ, 然后吻合神经。在转染后不同时间点取出C4—T2脊髓节段、DRGs连同臂丛神经, 行X-gal染色, 计数被标记的脊髓和DRGs神经元数目、部位及其范围; 观察相应神经根及周围神经轴突被标记情况。结果: 载体所导入神经同侧的脊髓前角运动神经元和DRGs感觉神经元被转基因产物 $\beta$ -gal标记; 由尺神经、正中神经所标记的神经元分别在C7—T1及C6—T1节段; 各神经相应的神经根及神经干轴突被标记, 轴突被标记长度可达吻合口远端。不同神经所标记的神经元数目不同, 随着时间推移标记物逐渐消退。结论: Ad介导的LacZ基因能从远距离特异、高效地逆行标记尺神经、正中神经的靶神经元, 然后又顺行标记该神经。这对臂丛神经解剖学研究、臂丛神经损伤和再生机制的研究具有实用价值。

关键词: [腺病毒载体](#) [LacZ基因](#) [臂丛神经](#) [脊髓](#) [神经通路示踪](#)

Tract tracing of nerves of upper extremity using adenoviral vectors containing LacZ gene [Download Fulltext](#)

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Fund Project:

Abstract:

Objective: To trace ulnar nerve, median nerves and their targeted neurons by remote delivery of adenoviral vectors containing LacZ gene (AdLacZ). Method: AdLacZ were administrated to the proximal stumps of ulnar nerves or median nerves in Wistar rats and the transected nerves were repaired. At different time points post transfection, the spinal cord of C4-T2 and their corresponding DRGs and brachial plexus nerves were harvested and processed for X-gal staining. Result: The motor neurons of ventral horns of spinal cords and sensory neurons of DRGs were labeled by transgene product  $\beta$ -gal in C7-T1 segments transfected from ulnar nerve and C6—T1 segments transfected from median nerves. The corresponding neural roots and nerve trunks of transfected nerves were also labeled. The number of labeled neurons of ulnar nerves was different from that of median nerves. The labeled neurons and axons could not be observed after several weeks post transfection. Conclusion: LacZ gene mediated by Ad could specially target the motor and sensory neurons retrogradely and then label the axons of the ulnar and median nerves anterogradely. This gene delivery method renders this system particularly attractive for neuroanatomical tracing studies of brachial plexus nerves and might offer potentialities for gene therapy of peripheral nerve injury.

Keywords: [adenoviral vector](#) [LacZ gene](#) [brachial plexus nerves](#) [spinal cords](#) [neural tract tracing](#)

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