

**A nontoxic pseudomonas exotoxin a induces
active immunity and passive protective
antibody against pseudomonas exotoxin a
intoxication.**

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摘要

Abstract

Pseudomonas exotoxin A (PE) is one of the most potent cytotoxic agents produced by Pseudomonas aeruginosa. In this study, we examined the possibility of using PE with a deletion of 38 carboxyl-terminal amino acid residues, designated PE(Delta576-613), for active immunization against PE-mediated disease. We first examined the toxic effects of PE and PE(Delta576-613) on 5- and 9-week-old ICR mice. The results show that the subcutaneous administration of PE(Delta576-613) at a dose of 250 microg was still nontoxic to 5- and 9-week-old ICR mice, while native PE was lethal at a dose of 0.5 and 1 microg, respectively. PE(Delta576-613) was then used to immunize ICR mice. The minimum dose of PE(Delta576-613) that could effectively induce anti-PE antibodies in 5- and 9-week-old ICR mice was found to be 250 ng. However, immunization with 250 ng PE(Delta576-613) failed to protect the immunized mice from a lethal dose of PE. The effective immunization dose of PE(Delta576-613) that could protect mice against a 2 microg PE challenge was found to be 15 microg. In addition, sera obtained from PE(Delta576-613)-immunized ICR mice were able to neutralize PE intoxication and effectively protect mice from PE. Thus, PE(Delta576-613) may be used as an alternative route to new PE vaccine development.