عنوان مقاله:

Fusion of Clostridium perfringens type D and B epsilon and beta toxin genes and it's cloning in E. coli

محل انتشار:

مجله آرشیو رازی, دوره 66, شماره 1 (سال: 1390)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Designing and producing a proper fusion construction is the most important problem of producing large quantities of a properly folded functional protein. This construction should have all necessary components of a real gene. A good designed fusion gene construction could be cloned into a good and suitable host. Clostridium perfringens is an important pathogen of humans and livestock and produces numerous toxins including epsilon and beta which are responsible for severe diseases. In the present study a new construction containing Clostridium perfringens type D epsilon toxin gene and type B beta toxin gene was designed. At the first step two pairs of primers were used for these genes amplification. At the next step epsilon forward and beta reveres primers were used to produce a chimeric gene containing amplified partial cds of etxD and partial cds of cpbB which are linked together by the AEAAAKEAAAKA fragment as a small linker. The method was based on fusion PCR and using of Pfu DNA polymerase, which has a proofreading activity. The fusion gene inserted into pJET١.٢blunt and cloned into E.coli strain TOP١٠. Based on the latest information, this is the first design and cloning of epsilon-beta fusion gene and also this is the first time that PCR fusion strategy is used for Clostriadial gene fusion, which could be used for development of a recombinant epsilon-beta fusion protein vaccine. This construction also could serve as a model for development and production of novel fusion protein for other potential proteins and toxins.

کلمات کلیدی:

Clostridium perfringens, epsilon toxin, beta toxin, Cloning, fusion PCR