

## عنوان مقاله:

A DNA vaccine against *Vibrio cholera* based on recombinant construct consisting OMPW, TCPA, CTB genes and)  
(evaluation of its immunogenicity

## محل انتشار:

بیست و یکمین کنگره ملی و نهمین کنگره بین المللی زیست شناسی ایران (سال: 1399)

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## خلاصه مقاله:

*Vibrio cholera* is one of the major causes of mortality in children under 5 years particularly in developing countries. Therefore, it is very important to improve preventive measurements and treatment strategies. The three most important pathogenic factors in *Vibrio cholerae* that are able to stimulate the immune system are: a) B subunit of CtxB Cholera enterotoxin, responsible for toxin binding to eukaryotic cells ,b) TcpA, an essential factor for bacterial colonization, and c) OmpW, the highly conserved extracellular protein ,as an stabilizing agent against environmental shock. DNA vaccines, due to their advantages such as ease of production and durable antibody production, have become the focus of researchers. In the present work, a then DNA consisting the aforementioned genes was clone on pEGFP-N1 harbouring fluorescent tags and expressed in HT 29 cell line. After conforming the expression under fluorescent microscope, the chimera was sub cloned on pcDNA3 vector. BalbC mice were administered with 100 µg of the new construct for 3 times along with Freund's adjuvant. Antibody titers against DNA vaccine was estimated by indirect ELISA using recombinant proteins and whole cells of bacteria as a target. The minimum amount of IgG inhibiting the effect of CT toxin on Y1 cell line was evaluated. After determining the bacterial lethal dose, the viability of neonatal mice from immunized mothers were challenged. Our data indicated that the antibody titers was increased more than 3 folds in immunized mice compared to control group. Animal challenge showed 100% survival rate against one LD of bacteria for pups from immunized mothers whereas pups of unimmunized mothers were totally died. Results from ELISA and animal challenge indicates that the new DNA construct have a significant productivity and can be as a DNA vaccine candidate.

## کلمات کلیدی:

DNA vaccine, pcDNA3, Protectivity, Diarrhea Enterotoxin, *Vibrio cholera*

## لینک ثابت مقاله در پایگاه سیویلیکا:

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