

عنوان مقاله:

Cloning and Expression of N-terminal Domain of Pseudomonas aeruginosa Flagellin and Evaluation of Antibodies Raised against it on Motility Inhibition of Pseudomonas aeruginosa

محل انتشار:

مجله علمی پژوهشی دانشگاه علوم پزشکی زنجان, دوره 20, شماره 80 (سال: 1391)

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خلاصه مقاله:

Background and Objective: Pseudomonas aeruginosa is an opportunistic pathogen that causes severe and lethal infections in immunocompromised individuals. This bacterium possesses a single polar flagellum. Flagellum and its subunit Flagellin play important roles in the pathogenesis of P. aeruginosa. Flagellin induces immune responses by interaction of its N-terminal domain with TLR- δ . Our main aims of this study were cloning and expression of N-terminal domains of flagellin and evaluation of antibodies raised against it on motility inhibition of P. aeruginosa. **Material and Methods:** The DNA sequence coding for the first 161 amino acids of flagellin was PCR amplified and cloned into a pET-28a expression vector. Recombinant protein was over expressed in BL-21(DE3), and purified by Ni-NTA resin. The immune reactivity of recombinant truncated flagellin was evaluated by Western blotting. The recombinant protein was injected into a rabbit and antibodies raised against it were evaluated for the cell motility inhibition of P. aeruginosa 8821M. **Results:** The N-terminal domain of Flagellin was successfully overexpressed in Escherichia coli BL-21(DE3) host strain. Anti-native and anti-N-terminal flagellin antibodies reacted with the recombinant protein. Motility inhibition assay demonstrated that polyclonal antiserum against N-terminal flagellin is able to inhibit the motility of P. aeruginosa 8821M. **Conclusion:** The N-terminal domain of flagellin may be used for development of a new recombinant vaccine against P. aeruginosa infections.

کلمات کلیدی:

Keywords: Cloning, Motility inhibition, N-terminal domains of flagellin, Pseudomonas aeruginosa

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