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Cloning, expression and immunogenicity analysis of protective effect of recombinant protein (OmpTS) of *Aeromonas hydrophila* in Common carp, *Cyprinus carpio*

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This study deals with the details of cloning, expression of recombinant ompTS of *Aeromonas hydrophila* and studied the immunogenicity of this protein in Common carp. *Escherichia coli* strains DH5a and BL21 (Pasteur Institute, Iran) were used for cloning and expression of ompTS. For vaccination and challenge study, 270 fish were maintained under laboratory conditions. Blood sample was taken from fish of each group and assayed by enzyme linked immunosorbent assay (ELISA). The LD⁵⁰ data revealed that LD50 value of *Aeromonas hydrophila* in this study was about 108.5 cfu. We isolated A. *hydrophila* in kidney tissue of fish, indicating that the death was directly related to A. hydrophila. Significantly higher mortalities occurred in control groups (PBS, PBS+adjuvant) (76.66%, 56.66%) compared with fish vaccinated with recombinant OmpTS protein purified with NI-NTA column with (13.33%) and without adjutant (16.66%) and electroelution method, respectively (13.33%) and (23.33%), with and without adjuvant, respectively (P≥0.05). There were no significant differences between fish mortalities vaccinated with recombinant protein in both method of purification, with and without adjuvant (P≥0.05). The RPS value of fish vaccinated with NI-NTA OmpTS, NI-NTA OmpTS plus adjuvant, OmpTSelectroeluted and OmpTSelectroeluted plus adjuvant were 78.26%, 82.61%, 69.57 and 78.26%, respectively. There was a significant difference between the RPS of fish vaccinated with recombinant protein in both method of purification, with and without adjuvant and control group (P<0.05).

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