

Title : Immunostimulant Activity of Protein Hydrolysate from *Arthrospira platensis* in Cyclophosphamide-Induced Immunosuppressive Rats

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ABSTRACT

Protein hydrolysates are recognized as a potent source of bioactive peptide. They are widely used in nutritional supplements and sports nutrition due to their high solubility and rapid absorption in the body. Additionally, protein hydrolysates from various hydrolysis processes and sources have demonstrated immunostimulatory effects. Thus, this study aimed to evaluate the immunostimulatory effects of protein hydrolysate from *Arthrospira platensis* (PS) in cyclophosphamide (CP)-induced immunosuppressive rats. Male albino rats were randomly divided into four groups. The normal control and negative control groups were received distilled water orally, while the immunosuppressive groups were treated orally with PS at doses of 3 and 6 mg/kg for 14 consecutive days. CP was administered on days 7 and 14 to induce immunosuppression. After the end of the treatment period, lysozyme activity in serum was measured, and phagocytic activity in peripheral blood was assessed. The results indicated that PS at all both doses effectively stimulated immune function in CP-induced immunosuppressive rats by increasing the phagocytic number. A significant ($p < 0.05$) increase in the phagocytic index was observed only in the high-dose PS group compared to the negative control group. However, the low-dose PS group exhibited a greater enhancement in lysozyme activity than the high-dose group. These findings suggest that protein hydrolysate derived from *A. platensis* is a potential immunomodulator and could be developed as immune-boosting product.