

Title : Antimutagenic Effect of Protein Hydrolysate from *Arthrospira platensis* in Cyclophosphamide-Induced Mutagenicity in Rats.

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ABSTRACT

Nowadays, spirulina or *Arthrospira platensis* is gaining attention due to its antioxidant properties. However, there are no clear reports on the antimutagenic efficacy of protein hydrolysate from *A. platensis* (PS). Thus, the aim of this study was to evaluate the antimutagenic effects of PS in cyclophosphamide-induced mutagenicity in rats. Male rats were randomly divided into four groups. Group 1 and 2 served as the normal and negative controls and received distilled water orally. Groups 3 and 4 were treated with PS at doses of 3 and 6 mg/kg for 14 days. Mutagenicity was induced by intraperitoneal injection of cyclophosphamide (CP) on days 7 and 14 of the treatment period. Micronucleus formation in bone marrow and the level of malondialdehyde, an index of lipid peroxidation in male albino rats, were examined. The results showed that treatment with PS at both doses tended to reduce the number of micronuclei in polychromatic erythrocytes (MnPCE/PCE) in CP-induced rats, but the differences were not statistically significant ($p > 0.05$) compared to the negative control group. However, PS at 6 mg/kg significantly ($p < 0.05$) increased the PCE:NCE ratio compared to the negative control group. Furthermore, a significantly lower ($p < 0.05$) serum MDA level was observed in all PS-treated groups compared to the negative control group. In conclusion, protein hydrolysate from *A. platensis* at 3 and 6 mg/kg exhibits antimutagenic properties.