

Study of seasonal changes of antioxidant enzymes of Lichen, *Physcia biziana* in Zirab region, Mazandaran, Iran

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Background and Aims: A Lichen is a symbiotic life form between a wide range of fungi, algae, or cyanobacteria, or possibly of all three. Antioxidants are the main factors for neutralizing the free radicals which are active and harmful for lichen.

Methods: The antioxidant enzyme of species was studied during period of summer, autumn and winter 1390 in Zirab region, Mazandran, Iran. The biochemical analysis involved measuring some antioxidant enzymes such as DPPH radical scavenging, superoxide dismutase, catalase and ascorbat peroxidase activities in the lichen using spectrophotometric methods.

Results: The tested extracts had strong antioxidant activity. The DPPH radical scavenging activity was as average of 10.46 ± 0.4 mg/ml. The superoxide anion scavenging was showed activity between 8.2 ± 0.2 to 10.26 ± 0.6 μ g/mg of protein.

Conclusions: The results obtained in the present study indicate that *P. biziana* is a potential source of natural antioxidant.

Keywords: Antioxidant activity; Superoxide dismutase; Lichen; *Physcia biziana*