

Effects of Ephedrine and *Ephedra fragilis* Crude Extracts on Human Peripheral Lymphocytes

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ABSTRACT

Ephedra fragilis Desf. (Ephedraceae), a locally cultivated medicinal plant, is a source of ephedrine and pseudoephedrine, two important alkaloids, which have long played an important pharmacological role. The present study investigated the in vitro effects of ephedrine and the *Ephedra* branch extract on unstimulated lymphocytes. *Ephedra* alkaloids were extracted from various plant parts and after phytochemical analysis, the brine shrimp lethality test was used to determine the activity of the extracts. The LC₅₀ of the branch extract was 581.395 g/ml, showing no statistical difference from that of ephedrine (208.203 g/ml). The ephedrine and extract did not show toxic effects on lymphocytes but exhibited immunostimulant activity. Although ephedrine cannot be used as an immune booster, it can be used as a lead drug for further immunological research.

KEYWORDS

Ephedra fragilis . ephedrine . lymphocyte activation . cell proliferation . cytotoxicity

REFERENCES

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