The effects of medicinal plants Viscum album, Juniperus communis and Xanthium strumarium on fibroblastic L929 and BHK21 immune cells

Supported by: GREEN, IAS, AIC

Background

Although reports indicate that Viscum album and Juniperus communis extracts affect immune system function, their impact on fibroblastic cells proliferation remains unclear. The aim of this study was to determine the antioxidant capacity of Viscum album, Juniperus communis and Xanthium strumarium leaf aqueous and ethanol extracts and their effects on L929 and BHK21 cells.

Methods

Antioxidant capacity of the extracts was measured using DPPH method. L929 and BHK21 cells were treated with 0.001 mg/ml, 0.01 mg/ml, 0.1 mg/ml, 1 mg/ml and 10 mg/ml of the extracts for 24 h in a complete growth medium. Cell viability was evaluated by MTT assay and the data were analyzed using one-way ANOVA.

Results

Lower concentrations (0.001, 0.01 and 0.1) mg/ml of Viscum album and Junipeurs communis leaf extracts exhibited higher antioxidant capacity and had no signifcant cytotoxic effects on L929 and BHK21 cells, however, higher concentrations (1 and 10) mg/ml had lower antioxidant activity and exhibited cytotoxic effects on the cells. Lower and higher concentrations of Xanthium strumarium leaf extracts significantly increased L929 and BHK21 cells viability.

Conclusion

Despite higher concentrations, lower concentrations of ethanol and aqueous Viscum album and Junipeurs communis have positive effects on fibroblastic L929 and BHK21 cells viability; however, ethanol and aqueous leaf extracts of Xanthium strumarium have no cytotoxic effects on L929 and BHK21 cells, which therefore, can improve immune system function safer than Viscum album and Juniperus communis.

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