

Enzyme antioxidant system evaluation of Stevia micropropagated with peptidomimetics as a silver carrier



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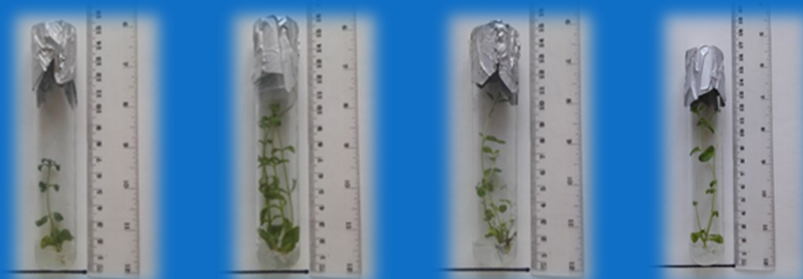
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Introduction

In the medicinally important *Stevia rebaudiana* Bertoni leaves are synthesized sweet diterpene glycosides, which are the main source of a caloric-free sweetener. To respond to the growing demand for this powerful medicinal plant with a reduced population, and to help preserve it, the study was focused on the development of a suitable protocol for clonal propagation by direct organogenesis of stevia using nanofibers, formed by newly synthesized low molecular weight peptidomimetics carriers of the biologically active agent silver ion.

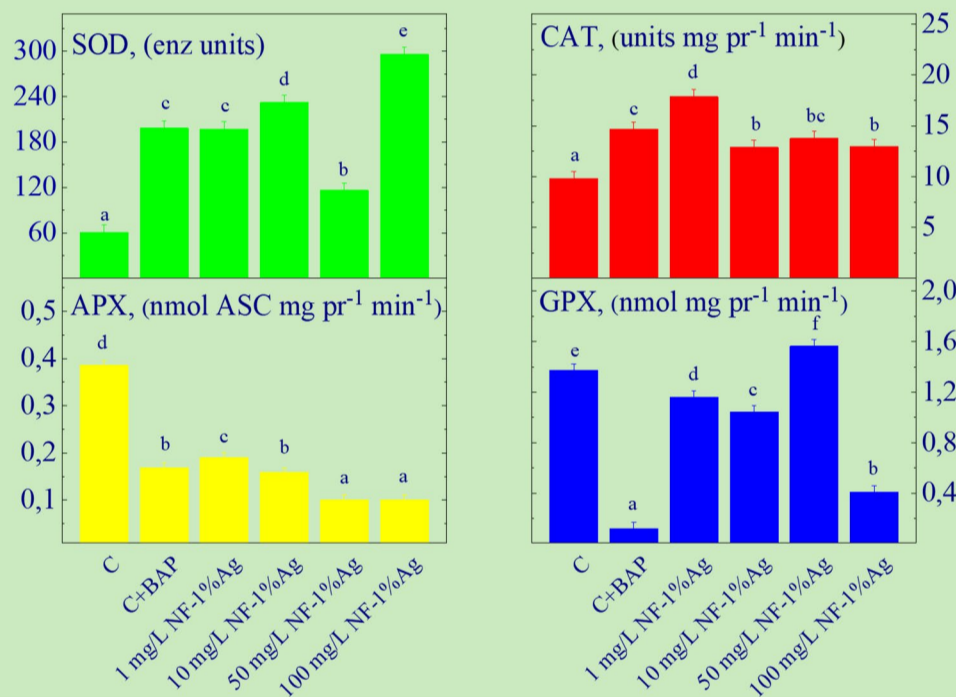
Results and Discussion

In general NF-1%Ag application to the MS medium at all studied concentrations caused an additional decrease in the content of the lipid peroxidation marker MDA compared with the control plants. From the decreasing of the hydrogen peroxide content in stevia plantlets cultivated in MS media with NF-1%Ag, and the respective increase of the enzymes with antioxidant potential (SOD, CAT, APX) could be concluded that NF-1%Ag reduced oxidative stress in plantlets during *in vitro* propagation.

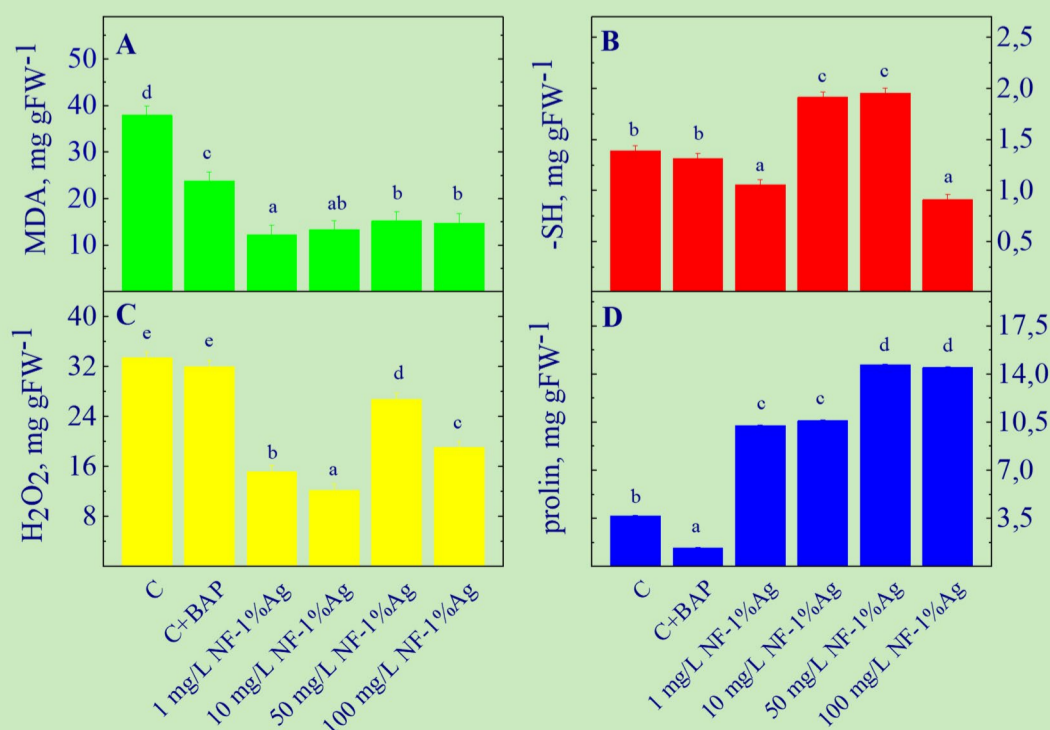


Material and methods

The experiments were conducted for the comparison of the enzyme antioxidant capacity and stress markers of *in vitro* propagated stevia plants in Murashige and Skoog (MS) media supplied with 1, 10, 50, 100 mg L⁻¹ nanofiber formed from peptidomimetics as a carrier of Ag.



The activity of antioxidant enzymes SOD, CAT, APX, and GPX in the *in vitro* propagated Stevia treated with 1, 10, 50, 100 mg L⁻¹ nanofiber formed from peptidomimetics as a carrier of Ag ions.



The content of stress markers MDA, -SH, H₂O₂, and proline in *in vitro* propagated Stevia treated with 1, 10, 50, 100 mg L⁻¹ nanofiber formed from peptidomimetics as a carrier of Ag.

Conclusion

From the decreasing of the hydrogen peroxide content in stevia plantlets cultivated in MS media with NF-1%Ag, and the respective increase of the enzymes with antioxidant potential (SOD, CAT, APX) could be concluded that NF-1%Ag reduced oxidative stress in plantlets during *in vitro* propagation.

Acknowledgements

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