

Protector role of stevioside under the influence of heavy metals on the proliferation of sprouts of wheat root cells

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Abstract

Diterpenoids is a large family of natural compounds, which in their chemical structure represent the coalescence of carbohydrate cycles, have a different hemometry, and show a polymorphous biological activity. Such compounds include a tetracyclic dipeptide - steviol, which is an agglomerate of glycosides derived from the extract of the herb *Stevia Rebaudiana* Bertoni. One of the glycosides of this herb is stevioside. This paper deals with the study of the proliferative activity of root cells under the action of the diterpene glycoside - stevioside in the absence of the stress factors and under the action of heavy metals. According to the obtained results, stevioside increases the mitotic activity of the root cell of wheat sprouts by 29%. All the studied heavy metals (Cd, Cu and Zn) inhibited to various extent the proliferation of the root cells at a high concentration (1 mM), while at a low concentration (10 µM) only a cadmium-containing sample showed a reliable difference with the control. Pretreatment with stevioside reduced the negative effect of heavy metals on the mitotic cell activity, which indicates the protective role of stevioside in the influence of pollutants on the plants.

Keywords

Heavy metals, Mitotic index, Phases of mitosis, Stevioside, *Triticum aestivum* L.

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