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PROTECTIVE EFFECT IN VITRO PLANTS CUCUMIS SATIVUS L. (AMERICAN CUCUMBER) BY BACTERIA ENDOPHYTES TOLERANT Cd (II) ROOT ISOLATED TYPHA LATIFOLIA (ESPADAÑA)

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Abstract content

Endophytic bacteria from the roots of Typha latifolia grown in soils contaminated with heavy metals were isolated. A total of 205 bacteria was obtained, which showed different levels of tolerance to Cd (II). 116 bacteria was observed that had one or more promotional features to solubilize phosphates plant, secrete siderophores, producing indole acetic acid (IAA) or possess the enzyme 1-aminocyclopropane-1-carboxylate (ACC) deaminase. 22 of these bacteria also showed a high tolerance to Cd (II) (MIC> 500 ppm). Isolated GRC065, GRC066, GRC093 and GRC140 were inoculated in seeds of Cucumis sativus L. (American cucumber) to observe its protective effect in plants exposed to 50 ppm of Cd (II). It was observed that the bacterial isolate to inoculate the plants tolerance to these metal was increased, so the elongation of the primary root and increase in the number of secondary roots evidenced. The presence of endophytic bacteria tolerant to Cd (II) inoculated in C. sativus plants could contribute in promoting plant growth, promote tolerance and improve metal phytoextraction processes in fitoacumuladoras plants. The use of techniques such as synchrotron light would assess whether or not this process is encouraging, demonstrating the availability of metal speciation, oxidation states, as well as display the section of the plant where the metal is hosting and how so endophytes isolated (GRC065, GRC066, GRC093 and GRC140) contribute to its degradation, assimilation or stabilization.

Summary

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