



Identification, characterization, growth promotion analysis and control of *Methylobacterium* sp. in *Mammillaria bombycina*.

Morales-Domínguez José Francisco and Liliana Mercado Díaz de León

Departamento de Química, Centro de Ciencias Básicas, Universidad Autónoma de Aguascalientes, Av. Universidad # 940, Ciudad Universitaria, C.P, 20100, Aguascalientes, Ags.

In vitro plant propagation is a very useful tool for mass production of plants in a short time, under axenic conditions and at a very economical cost. Various plant tissues can be used for propagation. However, it has been observed that under axenic conditions, many tissues of different plants contain endophytic microorganisms. These endophytes live within plant tissues under natural and *in vitro* conditions without causing any harm to their host. Under natural conditions, this symbiosis plays a very important role in plant growth and development. In this work, the presence of a pink pigmented bacterium was detected and identified during the *in vitro* propagation of *Mammillaria bombycina*. It was identified by 16S as *Methylobacterium* sp. The DNA of this bacterium was also used to obtain its genetic fingerprint by rep-PCR. The resistance of the bacterium to different antibiotics and to silver nanoparticles of green synthesis (AgNP) was analyzed. *In vitro* grown stem explants of *M. bombycina* contaminated with the bacterium were subjected to treatments with different concentrations of AgNP in MS medium and it was shown that they inhibit the growth with respect to the control, but the bacterium does not die. It was observed that the bacterium has the ability to promote the growth and development of *M. bombycina*, but not in other plants such as *Phaseolus vulgaris* L., *Helianthus annuus* L. and *Prosopis laevigata*.

Biography

Francisco has a master's degree in plant biology and a PhD in plant biotechnology. He is a professor and researcher of plant biotechnology at the University of Aguascalientes. Francisco has coordinated the postgraduate master's program in biotechnology. Francisco has published over 30 articles in renowned journals and has served as a reviewer for several journals.

Presenting author details

Full name: Morales-Domínguez José Francisco

Contact number: francisco.morales@edu.uaa.mx

Twitter account:

Linked In account:

Session name/ number:

Category: (Oral presentation/ Poster presentation)