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BIOSYNTHESIS OF SILVER NANOPARTICLES AND POLYHYDROXYBUTYRATE NANOCOMPOSITES OF INTEREST IN ANTIMICROBIAL APPLICATIONS

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ABSTRACT

This study deals with the optimization and scaling up of the production of poly(3-hydroxybutyrate), PHB, nanocomposites containing biosynthesized silver nanoparticles (AgNPs) to generate materials with antimicrobial performance. First, a comparative study of the chemical and biological synthesis of AgNPs during the fermentation process of *Cupriavidus necator* at shake flask-scale was carried out. These experiments demonstrated the inherent capacity of *C. necator* to reduce the silver salt and produce AgNPs without the need for adding a reducing agent and, that the method of synthesis

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