SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL EFFICIENCY OF Diatom-NPs-Ag COMPOSITE
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Composites consisting of diatoms particles and silver nanoparticles with high antimicrobial activity were prepared and characterized. According to World Health Organization antibiotics are losing their power to fight infections in every country in the world, a situation that could have "devastating" consequences for public health. In consideration of this the search for alternatives has become important. Among the most promising compounds to replace antibiotics are those naturally abundant and harmless to human health (like diatoms) and those obtained by green synthesis. Diatoms are easily obtained from diatomaceous earth, while NPs-Ag were obtained by reduction of a metal salt using Moringa extract as a reducing agent. NPs-Ag were adhered to the diatom’s surface by thermal treatment. Detailed test using UV-Vis spectrometer and SEM were done to verify the presence and disposition of NPs-Ag above the diatom’s surface. It was possible to verify the presence of NPs homogeneously distributed over de diatoms. 8 different concentrations were tested to evaluate NPs-Ag-D against Escherichia coli strain by Kirby Bauer method. 3 cm of inhibition halo were obtained; hence our NPs-Ag yields similar antibacterial activity as the commercial ones.

Keywords: Nps-Ag, Diatom, Green Synthesis

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