

# Biosynthesis and Characterization of Mycosilver Nanoparticles and its Antifungal Activity Against Aflatoxin Producing Fungi †

T.C. Arun Kumar <sup>1</sup>, M.Shariq Ahmed <sup>1</sup>, S. Hemalatha <sup>1,\*</sup>

<sup>1</sup> School of Life Sciences, B.S.Abdur Rahman Crescent Institute of Science & Technology, Chennai, India

\* Correspondence: hemalatha.sls@crescent.education;

† Presented at Virtual symposium to observe World Antimicrobial Awareness week “Applications of biotechnology and microbiology with special emphasis on Antimicrobial resistance”, 18-24 November 2020, Chennai, India

Received: 10.11.2020; Revised: 15.11.2020; Accepted: 17.11.2020; Published: 10.01.2021

**Abstract:** Aflatoxins are the toxic substances found in various foods such as peanuts, wheat, etc., produced by molds such as *Aspergillus flavus* and *Aspergillus parasiticus*. People are more exposed to it because of the contaminated foods by the fungi. They are commonly found in foods that are not properly preserved. Its noxious activity can even lead to cancer. Thus, the pathogenic fungi were isolated from the infected peanuts after surface sterilization using 70% ethanol. This study may provide some scope to inhibit the carcinogenic activity of the aflatoxins caused by the fungi with silver nanoparticles' guide. The integrated silver nanoparticles are recognized utilizing UV-Vis, FTIR, FESEM. The efficacy of the nanoparticles was screened against the pathogenic fungi, and its antifungal activity was evaluated. This research will highlight the inhibitory activity of silver nanoparticles against aflatoxins. This study may give new experience into possible research and examination that may beat difficulties related to nanotechnology usage for aflatoxin elimination. Since nano-sized silver materials have stronger antifungal activity than bulk silver materials, it has recently attracted great attention. Since nano-sized silver materials have stronger antifungal activity than bulk silver materials, it has recently attracted great attention. Since nano-sized silver materials have stronger antifungal activity than bulk silver materials, it has recently attracted great attention.

**Keywords:** aflatoxins; carcinogen; endophytic fungi; silver nanoparticles.

© 2021 by the authors. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## Funding

This research received no external funding.

## Acknowledgments

Authors are thankful to B.S.Abdur Rahman Crescent Institute of Science and Technology for providing research facilities.

## Conflicts of Interest

The authors declare no conflict of interest.