

#### 4. CONCLUSION AND FUTURE PROSPECTS

It is an established fact that the interest for a greener and biogenic synthesis of NPs has led to the production of safe, stable, and diverse NPs. The use of microbes, in general and fungi in particular, offers a most eco-friendly and cost-effective way of NPs synthesis when compared with the other methods. The fungi are considered as a bio mill, for the synthesis of NPs, due to their efficient role and innate capacity to synthesize, both intracellularly and extracellularly. The capability of fungi to synthesize NPs of determined size and shape is considered to be an amazing step forward. Moreover, fungi could be an ideal candidate for bulk production, due to the secretion of large amount of extracellular redox enzymes. Elaborate studies on novel pathways involved in mycosynthesis of NPs still need to be elucidated. There is also an acute demand to the study the factors affecting the rate of synthesis, monodispersity, downstream processing, and large-scale mycosynthesis of NPs for commercially viable applications. In the near future, the broad spectrum antibacterial, antifungal, antiviral, and antiparasitic potential of metal-based and polymeric NPs may overcome the multidrug resistance problems and might be explored as magic bullets, to improve and treat the infectious diseases.

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#### CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

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