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Anti-diabetic (AD) activities of ZnO doped with Ce (7 at%) nano particles (NP)

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Abstract

ZnO doped with Ce7 at% nano particle is the application of nano materials and in many fields. The nano particles of ZnO doped with Ce 7 at% are prepared directly into nano form. The nano particle has antidiabetic activity because of ZnO and by Ce 7 at%. Then ZnO NPs are analysed by PXRD method for parameters and confirmed with earlier data. Nano particles which are used for antidiabetic study has inhibition values which are increased with proper increase in the value of concentration, IC₅₀ values are 28.01 for nano particles of ZnO doped with Ce7 at%.

Introduction

A nano particle is a without optical & chemical properties that are not formed bulk materials [1], [2], [3], [4], [5], [6], [7]. The nano materials is a single unit small sized between 1 and 100 nm with a surrounding interfacial layer. ZnO with Ce7 at% has good AD activity and IC₅₀ confirms it.

Section snippets

Characterisation

ZnO doped with Ce7 at% nano particles are prepared by soft chemical method. The nano particle has an anti diabetic property. The anti diabetic values for nano materials are measured the value of inhibition scale in anti diabetic increase with increased concentration as shown in Figs. 1 and 2 and Table 1, the structural properties are confirmed with TEM and PXRD and referred with JCPDS data of earlier one and already presented....

Result and discussion

ZnO doped with Ce7 at% nano particles are used for anti diabetic activity. The nano particles are prepared by soft chemical method. It's converted to nano scale the value of inhibition scale is increases with increase in concentration IC₅₀ values ZnO doped with Ce7 at% is 28.01...

Conclusion

The ZnO doped with Ce7 at% have been synthesised by soft chemical method. The nano particles have been subjected to the anti diabetic studies, the value of inhibition scale is increases with increase in concentration and IC₅₀ values ZnO doped with Ce7 at% is 28.01....

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper....

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[Mixed salts of amino acids: L-lysiniium \(2+\) chloride nitrate, L-lysiniium \(2+\) chloride tetrafluoroborate and L-lysiniium \(2+\) chloride perchlorate](#)

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2022, South African Journal of Botany

Citation Excerpt :

...Apart from which oxidative-stress involves vital role in oxidative damage, insulin sensitivity as well as destruction of the enzymes and cytoskeleton organization (Robkhob *et al.*, 2020). Researchers focus on ZnO NPs in the anti-diabetic application as it enhanced the glucose, flexibility, serum insulin and decreased blood glucose level (Kannan *et al.*, 2020; Nasrollahzadeh *et al.*, 2019). In present days, NPs have more important application in catalytic, optical, electrical, antimicrobial and medical field (Ahmad *et al.*, 2020)...

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...Doping techniques have been used by a large number of other researchers and scholars in recent years. Many substances, including Mn [79], Fe [80], Mg [81], Gd [82], Ag [83], Ce [84], and others, have been doped in ZnO nanoparticles to further improve the performance of the product. Several researchers have synthesized doped ZnO in supercritical water, and it has been found that the variation of dopant type and concentration causes significant changes in particle size, specific surface area, morphology, and properties of ZnO particles....

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...The steric and inductive consequences commence by components present on the aromatic section of the Schiff base can persuade the properties of the ligand appreciably. In the persistence of the well-proper efforts in understanding the chemical and disorder of Schiff bases and their metallic complexes, the crystal construction of Schiff base from nitroaniline, methoxy naphthaldehyde is reported [39-43]. The entitled crystal is analysed for XRD

for confirming the structure, computational manner for structural reconfirmation as well as the hardness and diabetic activity based on the chemical composition and strength [44]...

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...Globularity value less than unity indicate that the molecular surface is more structured, not a sphere [28–35]. Low value of Asphericity shows the less anisotropic nature of the crystal [9,36–44]. In order to examine the coordination environment of CHM crystal, we mapped the fragment patches for CHM crystal (Fig. 3) which contain 21 fragments....

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2022, AIP Conference Proceedings



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