

Antimicrobial activity of silver nanoparticles synthesized from the bark extract of *Syzygium cumini*

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The unique property of the silver nanoparticles having the antimicrobial activity plays an important role in present nanotechnology. The environmentally non-toxic and eco-friendly silver nanoparticles production from the plant extracts creates the major research interest in the field of nanobiotechnology. The present research study was the biogenic synthesis of the silver nanoparticles with a precise stability from the bark extract of *Syzygium cumini*, which is a medicinal plant available in the tropical forests, and it has best anti-diabetic property.

In this study we had done the characterization through the UV-Visible spectroscopy, Atomic force microscopy, Dynamic light scattering, and Scanning electron microscopy. From all above characterization techniques the synthesized nanoparticles shows average size from 40 nm to 80 nm and these nanoparticles are polydisperse and uniform in distribution.

The synthesized nanoparticle shows antibacterial property and has a better zone of inhibition with the different pathogenic bacteria species such as *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Bacillus licheniformis* 9555. The zone of inhibition was characterized by the well plate method at different concentrations of 2, 5, 10, 15, 25, 50, 75 and 100 μ L.

Nanoparticles had a wide variety of application in medicine, electronics, chemistry and other related sciences. These nanoparticles are used in electronics, household hospitals appliances, cleaning agents, odor textiles, water drainage systems, food packaging materials and supplements, etc.

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Meta analysis of eugenol synthase-I in *Ocimum basilicum*

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Eugenol is one of the important chemical constituent of the essential oils of many aromatic plants, such as *Eugenia caryophyllus*, *Dicopelium caryophyllatum*, *Pimenta dioica*, *Croton zehntneri*, and *Ocimum* species. Recent studies suggest that *Ocimum* (tulsi) may be a COX-2 inhibitor, like many modern painkillers, due to its high concentration of eugenol (1-hydroxy-2-methoxy-4-allylbenzene). *Ocimum* is proven to be an effective treatment for diabetes by reducing blood glucose levels. Previous study showed that high glucose level in blood results in the increase transcription of Cyclooxygenase-2 (Ref: Narkunraja Shanmagum, Irene T. Gaw Ganzalo and Rama Natarajan). The basic idea behind the work is to reverse this process and for that Eugenol synthase comes in picture. Eugenol synthase suppresses COX 2 expression that has already been proved by Sun Suk Kim et al. There are around 410 experimentally proven medicinal plants having Anti-diabetic properties but the complete mechanism of action is available only for about 109. There are several medicinal plants whose extract modulate glycolysis, Krebs cycle, gluconeogenesis, HMP shunt pathway, glycogen synthesis and their degradation, cholesterol synthesis, metabolism and absorption of carbohydrates, and synthesis and release of insulin. This work provides a comprehensive overview of Meta Analysis of Eugenol Synthase-I in *Ocimum basilicum*.

Keywords: Eugenol synthase, COX-2, *Ocimum basilicum*, Meta analysis.

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