

BOOK OF ABSTRACTS

**Published on the Occasion of a International Conference on
Cutting-Edge Strategies in Epidemiology and
Diagnostics of Infectious Diseases (CESEDID - 2025)**

Organizers

**Department of Microbiology, Centre for Infectious Diseases (CID),
Saveetha Dental College and Hospitals, SIMATS, Chennai**

**Editors: Rajesh Kanna Gopal, A.S. Smiline Girija, R.V. Geetha,
Sathish Sankar, J. Vijayashree Priyadharsini,
Pitchaipillai Sankar Ganesh & Priya Devi K.**

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employed to evaluate the prevalence of beta-lactamase enzyme production. The current study reported 41.8%, 11.99% and 54.7% positive results by phenotypic methods for ESBL, AmpC and Carbapenemase enzymes, respectively. Among the genes assessed by PCR, *bla*TEM 54.4% was the most prevalent, followed by *bla*OXA48 39.2% and *bla*KPC 22.7% The AmpC encoding gene *bla*MOX (0%) was not detected. Thus, the current study revealed a higher rate of multidrug resistance among *Klebsiella pneumoniae* strains, highlighting a concerning resistance rate underscoring the importance of appropriate antibiotic stewardship and recommending a proper surveillance to mitigate healthcare crises.

A comparative investigation into the green synthesis and characterization of copper oxide and zinc oxide nanoparticles utilizing *Hemidesmus indicus* root extract.

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This research examines the green synthesis of copper oxide (CuO) and zinc oxide (ZnO) nanoparticles using the root extract of *Hemidesmus indicus*. The nanoparticles were examined using UV-Vis, FTIR, XRD, and FE-SEM techniques. The UV-Vis analysis confirmed the successful creation of the nanoparticles, while FTIR spectra revealed the presence of phytochemical functional groups involved in reduction and capping processes. The X-ray diffraction patterns confirmed the crystalline characteristics of

both types. The CuO nanoparticles had an irregular morphology, while the ZnO nanoparticles had more distinct nanostructures. The study highlights the potential of *Hemidesmus indicus* as a bioresource for environmentally friendly metal oxide nanoparticle synthesis, with potential applications in antimicrobial agents, environmental remediation, and biomedical sciences.

Keywords: Green synthesis, Copper oxide nanoparticles, Characterization, Zinc oxide nanoparticles, *Hemidesmus indicus*

Metagenomic Study of Chicken Bedding Reveals AMR Gene Abundance and Microbial Diversity

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Antimicrobial resistance (AMR) is a growing global health concern, with poultry farms acting as key reservoirs due to the frequent use of antibiotics. Chicken bedding, which accumulates feces and organic matter, supports diverse microbial communities and may harbor antimicrobial-resistant bacteria and genes. In this study, we performed Whole Metagenome Sequencing (WMS) of chicken bedding material to investigate microbial diversity and the prevalence of AMR genes. Total DNA was extracted and libraries were prepared using the Twist NGS Kit (Cat. No. 104119) with an average insert size of 384 bp. Sequencing was carried out on the Illumina NovaSeq 6000 platform (2×150 bp), generating approximately 12 GB of data per