**CRIPS** Current Research and Information on Pharmaceutical Sciences

**Vol. 17, No. 1, January-February 2023**



**BUSINESS CORRESPONDENCE**

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Published by National Institute of Pharmaceutical Education and Research (NIPER), S.A.S. Nagar (Punjab)



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The cover page contains a figure from the article of Dr. Jagattaran Das

# EDITORIAL

Antimicrobial resistance (AMR) has been declared as a global health threat by world health organization (WHO). The misuse, overuse of antimicrobials are the major causes for the development of resistance. There is an urgent need for development of new antimicrobials against resistant microbes. The oxazolidinones are potent antibacterial agents effective against multidrug-resistant Gram-positive bacteria. Linezolid is the first generation oxazolidinone antibacterial agent. However, microbes developed resistance to Linezolid after few years and it led to development of next generation oxazolidinones. Tedizolid is effective against skin infection, and Radezolid is in clinical trial for treatment of infection caused by Linezolid resistant microbes. The phosphorous-phenyloxazolidinones have been found to inhibit the linezolid resistant microbes. The compounds were designed by molecular docking studies, synthesized and found active against linezolid resistant microbes in in-vitro studies.

The persulfates such as sodium persulfate and potassium persulfate are used as oxidants for C-C C-X bond formation reactions, and an initiator for polymerization reactions for manufacturing of polymers. Persulfates have significant applications in biological and drug degradation studies. Potassium persulfate has been employed in the preparation of an artificial red blood substitute (grafted starch-encapsulated haemoglobin). Potassium persulfate is utilized as a disinfectant in livestock, aquaculture and poultry products. Potassium persulfate acts as an electron acceptor in for photo catalytic degradation of metformin, and other organic pollutants. Persulfates are safe organic reagents, which have broad applications.

Drug metabolism is a pharmacokinetic process which facilitates the drug's effectiveness and safe elimination from the body. The drugs are metabolized by enzymes or xenobiotics, such as by the CYP450 family of enzymes. The Phase I metabolism process involves oxidation, reduction, and hydrolysis reactions. The drugs may require further modifications (phase II metabolism) which involves conjugation reactions. In a few cases, the metabolism process can generate reactive metabolites and cause toxicity. The in silico tools are utilized to predict, investigate the biotransformation in human body. Artificial intelligence (AI) methods are being developed to study drug metabolism and associated toxicities. Quantum chemistry has been applied to investigate drug metabolism and toxicity. Quantum chemical analysis predicted the atomic-level information about the metabolism of familiar antiviral drug remdesivir. Chemoinformatics studies, Quantum chemical studies and AI are considered as potential tools for prediction of drug metabolism and toxicities.

Dr. Sharada Prasanna Swain