

# Antioxidant and antibacterial properties of benzimidazoles and its copper complex

Sakuntala Samuelson and Shubharani,

Surana College, Bangalore

**Abstract:** Benzimidazoles are a group of heterocyclic, aromatic and bioactive organic compound which exhibit a wide range of biological properties and used as pharmaceutical target. Benzimidazole derivatives are structural isomers of naturally occurring nucleotides, which allow them to interact freely with biopolymers of living systems. In the present study, the evaluation the antioxidant effect of 1,3, bis (benzimidazolyl) benzene and its copper complex by DPPH method along with inhibitory effect of these compounds on gram-positive bacteria such as Staphylococcus aureus, Streptococcus mutans and Enterococcus faecalis, more frequently found in dental caries, which is one of the most prevalent chronic diseases of the world wide was carried out by Micro titer plate Resazurin method. According to the result, The percentage of inhibition at 200-1000 $\mu$ g/ml concentration of 1,3, benzimidazole and its Cu<sup>2+</sup> complex were compared with the standards catechol (phenol), whereas, the tested compounds were found to have less antioxidant activity compare to standard which ranged from 34.06 to 92.0% in different concentrations. The studied compounds showed an effective antibacterial activity against all three bacterial strains. Highest activity was observed against Streptococcus mutans from both the compounds studied and lowest activity was observed against Enterococcus faecalis.

**Key words:** Benzimidazoles, Copper complex, DPPH, Resazurin, Antioxidant, Antibacterial