

## SYNTHESIS, ANTIBACTERIAL, ANTIFUNGAL AND GENOTOXIC ACTIVITY OF BIS-1,3,4-OXADIAZOLE DERIVATIVES

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In the present investigation, four 1,3,4-bis-oxadiazole derivatives were synthesized as potential antimicrobial agents. The compounds are: 5,5'-dimercapto-bis-[1,3,4-oxadiazol-2-yl]propane (2a), 5,5'-dimercapto-bis-[1,3,4-oxadiazol-2-yl]butane (2b), 5,5'-dimercapto-bis-[1,3,4-oxadiazol-2-yl]octane (2c) and 5,5'-dibenzylthio-bis-[1,3,4-oxadiazol-2-yl]butane (3). The above newly synthesized compounds were investigated for their antibacterial, antifungal and mutagenic activities. The results of the biological activities revealed that the compounds 2a-c exhibited both antibacterial and antifungal activities against *S. aureus* and *B. subtilis*. Compound 2a also showed activity against *P. aeruginosa*. All the above compounds and compound 3 exhibited activity against *C. albicans*. Genotoxic studies showed that compound 2a had a weak base pair substitution mutagenicity but none of them exhibited a frameshift mutagenic action using Ames test.

**Key words:** *bis-1,3,4-oxadiazole, chemical mutagenicity, antibacterial, antifungal*

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