SYNTHESIS AND ANTIMICROBIAL EVALUATION OF SYMMETRICAL DIQUATERNARY AMMONIUM SALTS BEARING BIS 1,3,4-OXADIAZOLE RINGS MOIETIES

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Abstract. This study describes the synthesis of some novel compounds containing bis-1,3,4 oxadiazole bearing quaternary ammonium salt moieties. The target compounds were prepared from 2-(dimethylamino)ethyl methacrylate (DMAEMA) or 2-(diethylamino) ethyl methacrylate (DEAEMA), using adipic acid as starting material. All the newly synthesized compounds showed satisfactory analytic data for the proposed structures, which were confirmed by IR and NMR (1H and 13C) spectroscopy. The newly synthesized compounds were evaluated for their antibacterial activity against various gram-positive and gram-negative strains of bacteria, and the antifungal activities were tested against three phytopathogenic fungi namely, Fusarium oxysporum, Fusarium commune and Fusarium rodelens. Some of the tested compounds displayed promising antibacterial and antifungal activities.

Keywords: 1,3,4-oxadiazole, quaternary ammonium compounds, DMAEMA, DEAEMA, antimicrobial activities.

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