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Synthesis, characterization and antibacterial evaluation of new 1,2,4- triazole-3-thiol derivatives

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Abstract

Context: *In this manuscript, evaluation of the individual antibacterial effect of new synthesized 1,2,4-triazole-3-thiol derivatives against certain types of bacteria (Gram-positive and Gram-negative).*

Methods: *Synthesize of some new 1,2,4-triazole derivatives and characterization of synthesized derivatives were characterized by Fourier transforminfrared spectroscopy, proton nuclear magnetic resonance, and elemental microanalysis (CHNS). The antibacterial effect of the synthesized derivatives was assessed by determining their inhibitory concentration whereby calculate their inhibition zone versus certain types of standard antibiotics, concentration ranging from 0.250, 0.500, and 1 mg/1 ml.*

Results: *Most synthesized compound showed inhibition zone against Gram-positive and/or Gram-negative bacteria, compound (TRN4) showed moderate inhibition against resistant Pseudomonas aerogenosa, while standard reference drug (cefepime) did not show activity.*

Conclusion: *These results indicate that the introduction of triazole -3-thiol moiety may produce antibacterial activity against certain types of bacteria and according to side chain group (beside thiol).*

Author Keywords

1,2,4-triazole, Antibacterial, Heterocyclic compounds, Triazol, 3, Thiol derivatives

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