

Antimicrobial activity of newly synthesized methylsulfanyl-triazoloquinazoline derivatives

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Objective: This research was aimed to study and evaluate the antimicrobial activity of a novel 2-methylsulfanyl-[1,2,4] triazolo[1,5-a]quinazoline and its derivatives. Antibacterial activity of the target compounds was tested against a variety of species of gram positive bacteria as *Staphylococcus aureus* ATCC 29213, *B. subtilis* ATCC6633 and gram negative bacteria as *Pseudomonas aeruginosa* ATCC27953 and *E. coli* ATCC 25922. In addition to some yeast, fungi such as *Candida albicans* NRRL Y-477 and *Aspergillus niger* were screened.

Methods: Antimicrobial tests were carried out by the agar well diffusion method using 100 µL of suspension containing 1×10^8 CFU/mL of pathological tested bacteria, 1×10^6 CFU/ml of yeast and 1×10^4 spore/ml of fungi spread on nutrient agar (NA), Sabouraud dextrose agar (SDA), and potato dextrose agar (PDA) respectively.

Key finding: The minimum inhibitory concentration (MIC) of the tested compounds has been determined by using broth double dilution method (Serially diluted technique) in proper nutrient. For comparison, ciprofloxacin and ketoconazole were used as antibacterial and antifungal reference drugs. Compounds 6, 9, 13, 14, and 11 were found to have the highest broad-spectrum antibacterial activity against *Staphylococcus aureus* ATCC 29213, *B. subtilis* ATCC6633 and gram negative bacteria as *Pseudomonas aeruginosa* ATCC27953 and *E. coli* ATCC 25922 with MIC-values of 6.25 and 12.50 µg/ml.

Conclusions: It is clear that the synthesized compounds are promisingly significant and good antimicrobial agents. The present study revealed that compounds 6, 9, 13, 14, and 11 have been disclosed as potent antimicrobial agents and could be useful as templates for further development through modification or derivatization to design more potent antimicrobial agents.

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