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Antimicrobial activity of a newly synthesized methylsulfanyl triazoloquinazoline derivatives

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Abstract

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 aeroginosa* ATCC27953 and *E. coli*ATCC 25922. In addition to some yeast and fungi as *Candida albicans*NRRL Y-477 and *Aspergillusniger* were screened.

Methods Antimicrobial tests were carried out by the agar well diffusion method, [28] using 100 µL of suspension containing 1 x10^8 CFU/mL of pathologicaltested bacteria ,1 x10^6 CFU/ml of yeast and 1 x 10^4 spore/ml of fungi spread on nutrient agar (NA), Sabourand 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 *StaphylococcusaureusA*TCC 29213, *B. subtilis*ATCC6633 and gram negative bacteria as *Pseudomonas aeroginosa* ATCC27953 and *E. coli*ATCC 25922 with MIC-values of 6.25 and 12.50 µg/ml.

Conclusions it is clearly that the synthesized compounds are promisingly significant, 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**.**