

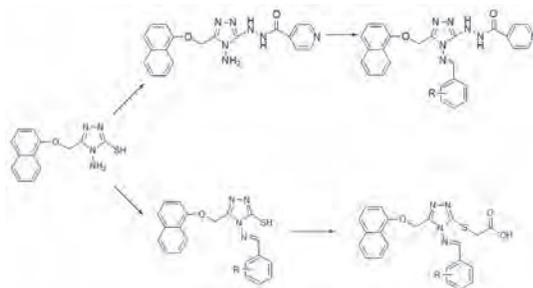
SYNTHESIS AND ANTIMICROBIAL ACTIVITY SCREENING OF 2-[4-(SUBSTITUTED BENZYLIDENAMINO)-5-(NAPHTHALEN-4- YLOXY) METHYL-4H-1,2,4-TRIAZOL-3-YL THIO] ACETIC ACID AND 2-[4-(2-SUBSTITUTED BENZYLIDENAMINO)-5-(NAPHTHALEN-4- YLOXY)METHYL-4H-1,2,4-TRIAZOL-3-YL]ISONICOTINYL HYDRAZIDE DERIVATIVES

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ABSTRACT In this research work with an intention of synthesizing some potent antimicrobial agents, we have synthesized two novel series of triazole derivatives (**3f-j** and **5k-o**) and screened them for antibacterial, antifungal, and antitubercular activities. For the synthesis of compounds **3f-j**, initially compound (**1**) was treated with various substituted aromatic aldehydes which results in synthesis of 4-(substituted benzylidenamino)-5-[(naphthalen-4-yloxy)methyl]-4H-1,2,4-triazolo-3-thiol (**2a-e**), further (**2a-e**) is converted to 2-[4-(substituted benzylidenamino)-5-(naphthalen-4-yloxy)methyl-4H-1,2,4-triazol-3-yl thio] acetic acid (**3f-j**) derivatives by the reaction with chloroacetic acid. Similarly, for the synthesis of titled compounds (**5k-o**), compound **1** was condensed with isonicotinyl hydrazide to give 2-[4-amino-5-(naphthalen-4-yloxy)methyl-4H-1,2,4-triazol-3-yl] isonicotinyl hydrazide (**4**) and compound (**4**) converted to Schiff derivatives of 2-[4-(2-substituted benzylidenamino)-5-(naphthalen-4-yloxy)methyl-4H-1,2,4-triazol-3-yl] isonicotinyl hydrazide (**5k-o**) using substituted aromatic aldehydes. The structures of the synthesized compounds (**3f-j** and **5k-o**) were confirmed on the basis of infrared, nuclear magnetic resonance, and mass spectral data. All the synthesized compounds (**3f-j** and **5k-o**) were screened for their antibacterial, antifungal, and antitubercular activities using broth microdilution method and microplate alamar blue assay method, respectively. Among the synthesized compounds, **3g** and **5o** showed significant antitubercular activity, compounds **3g**, **3j**, **5l**, and **5o** showed significant antibacterial and antifungal activity.



KEYWORDS 1,2,4-triazole, Isonicotinic acid hydrazide, Schiff base, 1,2,4-triazolyl thioacetic acid, Antibacterial, Antitubercular, Antifungal.

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