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Synthesis of pyrazolo-1,2,4-triazolo[4,3-a]quinoxalines as antimicrobial agents with potential inhibition of DHPS enzyme

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Abstract:

Aim: The development of a new class of antimicrobial agents is the optimal lifeline to scrap the escalating jeopardy of drug resistance. Experimental: This study aims to design and synthesize a series of pyrazolo-1,2,4-triazolo[4,3-a]quinoxalines, to develop agents having antimicrobial activity through potential inhibition of dihyropteroate synthase enzyme. The target compounds have been evaluated for their in-vitro antimicrobial activity. Results & discussion: Compounds 5b, 5c were equipotent (minimal inhibitory concentration = 12.5 µg/ml) to ampicillin. The docking patterns of 5b and 5c demonstrated that both fit into Bacillus Anthracis dihydropteroate synthase pterin and p-amino benzoic acid-binding pockets. Moreover, their physicochemical properties and pharmacokinetic profiles recommend that they can be considered drug-like candidates. The results highlight some significant information for the future design of lead compounds as antimicrobial agents. © 2018 Newlands Press.

Reference:

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