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Synthesis and in Vitro Antimicrobial and Cytotoxicity Activities of 2-[(2-nitro-1-phenylalkyl)thio]benzoic Acid Derivatives

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Abstract: In this research 14 compounds were tested for their antimicrobial activity. The synthesis of 7 compounds corresponding to 2-[(2-nitro-1-phenyl-propyl)thio]benzoic acids 4 has not been reported before and 7 compounds corresponding to 2-[(2-nitro-1-phenyl-ethyl) thio]benzoic acid 3 were reported by our research group. The antibacterial activity of the title compounds was evaluated by 2 Gram (+) (*Staphylococcus aureus*, *Bacillus subtilis*) and 2 Gram (-) (*Pseudomonas aeruginosa*, *Escherichia coli*) microorganisms. The antifungal activity of the compounds was also determined against yeast-like fungi (*Candida albicans*, *C. krusei*). For antibacterial activity, ampicillin and for antifungal activity, fluconazole and ketoconazole have been used as reference compounds. All of the 2-[(2-nitro-1-phenyl-ethyl)thio]benzoic acid 3 derivatives were more active than the reference compound ketoconazole in the antifungal activity test. The title compounds were also screened by consecutive dilution to explore their toxicity to a Vero cell line. Except for 3d and 3e all of the compounds 3 exhibited lower toxicity than ketoconazole.

Key Words: 2-[(2-nitro-1-phenylalkyl)thio]benzoic acid derivatives, β -Nitrostyrenes, Antibacterial Activity, Antifungal Activity, Cytotoxic Activity

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