



Synthesis, characterization and biological activity of azides and its derivatives

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ABSTRACT

Being highly reactive and polar in nature, azide and their derivative are shown to be appreciably active for antibacterial activities. Azide synthesized compounds are the key tools of active research because of their reactivity and polar character. The target of the present work is to synthesize 4-hydroxyphenyl azide, 4-nitrophenyl azide and their derivative by adopting the synthetic route. The adoption of this technique is to achieve optimized yield by using different solvents and reactants and their structure determination is carried out by using UV-Vis, Fourier-transform infrared spectroscopy and gas chromatography–mass spectrometry techniques. The presented study depicts the multistep synthesis of 4-hydroxyphenyl azide (85%–93%), 4-nitrophenyl azide with unsaturated sodium azide (90%–92%), 3-bromo-4-hydroxyphenyl azide (85%–92%) and 2-bromo-4-nitrophenyl azide (96%) with N-bromosuccinimide. The synthesized compounds have shown remarkable antibacterial activities against all pathogens and K, S, L compounds have inhibited the bacterial growth in the range of (22, 13, 17, 9 mm), (24, 14, 14, 12 mm), (22, 7, 5, 5 mm) against bacterial species (*Bacillus subtilis*, *Pseudomonas aeruginosa*, *Proteus mirabilis* and *Agrobacterium tumefaciens*) more effectively.

Keywords: Azides; Synthesis; Derivatives; Biological activity; Characterization

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