

Study of the Antimicrobial Activity of Aminoreductone against Pathogenic Bacteria in Comparison with Other Antibiotics

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Abstract : Antimicrobial activities of aminoreductone (AR), a product formed in the initial stage of Maillard reaction, were screened against pathogenic bacteria. A significant growth inhibition of AR against all 7 isolates (*Staphylococcus aureus* ATCC® 25923™, *Salmonella Typhimurium* ATCC® 14028™, *Bacillus cereus* ATCC® 13061™, *Bacillus subtilis* ATCC® 11774™, *Escherichia coli* ATCC® 25922™, *Enterococcus faecalis* ATCC® 29212™, *Listeria innocua* ATCC® 33090™) were observed by the standard disc diffusion methods. The inhibition zone for each isolate by AR (2.5 mg) ranged from 15±0 mm to 28.3±0.4 mm in diameter. The minimum inhibitory concentration (MIC) of AR ranging from 20 mM to 26 mM was proven in the seven isolates tested. AR also showed the similar effect of growth inhibition in comparison with antibiotics frequently used for the treatment of infections bacteria, such as amikacin, ciprofloxacin, meropenem, and levofloxacin. The results indicated that foods containing AR are valuable sources of bioactive compounds towards pathogenic bacteria.

Keywords : pathogenic bacteria, aminoreductone, Maillard reaction, antimicrobial activity

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