

The Effect of Extracts of 12 Local Medicinal Plants Against Uropathogenic Escherichia Coli

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Abstract : Urinary tract infections are among the most serious public health issues in all age groups. Thus, the empirical therapy should be based on local levels of resistance, as indicated in several studies from different countries, to effectively avoid the emergence of multidrug-resistant bacterial strains and recurrent infections. Numerous effective antibiotic treatments are available, but would be ineffective for treating recurrent cystitis caused by a urinary tract infection, as well as the emergence of drug resistance. That is why the aim of this study was to highlight the antibacterial and the antioxidant activity of 11 medicinal plants used traditionally in Algeria against E. coli, the most responsible urinary tract infections. First, the extraction of total polyphenols with aqueous acetone showed variable yields. The highest yield was obtained by *Asplenium trichomanes* with 27%, followed by *Petroselinum crispum* and *Ciannamomum cassia* with an equal yield of 21%. *Artemisia herba-alba* gave the lowest yield (9%). The extracts of different plants showed variable contents of phenolic compounds. Reducing power and DPPH (2,2-diphenyl-1-picrylhydrazyl) scavenging activity revealed that most of the extracts studied had significant activity. The anti-free radical activity was very high in the extract of *Asplenium adiantum-nigrum* compared with the other extracts studied, but *Petroselinum crispum* and *Parietaria officinalis* had the lowest reducing activity; Antibacterial activity was determined on E. coli strains using the diffusion, MICs (Minimum Inhibitory Concentrations) and MBCs (Minimum Bactericidal concentrations) methods. The strains tested were sensitive to most extracts studied, except *Asplenium adiantum-nigrum* extract, for which both strains showed resistance.

Keywords : E. coli, medicinal plants, phenolic compounds, urinary infections

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