

## Identification of Phenolic Compounds with Antibacterial Activity in Raisin Extract

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**Abstract :** The bioactive properties of phytochemicals indicate their potential as natural drug products to prevent and treat human disease; in particular, compounds with antioxidant and antimicrobial activities may represent a novel class of safe and effective drugs. Following desiccation, grapes (*Vitis vinifera*) become more resistant to microbial-based degradation, suggesting that raisins may be a source of antimicrobial compounds. To investigate this hypothesis, total phenolic extracts were obtained from common raisins, local market-sourced. The acetone extract was tested for antibacterial activity against four prevalent bacterial pathogens (*Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Salmonella* spp. and *Escherichia coli*). Antibiotic sensitivity and the Minimum Inhibitory Concentration (MIC) were determined for each bacterium. High performance liquid chromatography was used to identify compounds in the total phenolic extract. The raisin phenolic extract inhibited growth of all the tested bacteria; the greatest inhibitive effect (normalized to cefotaxime sodium control antibiotic) occurred against *P. aeruginosa*, followed by *S. aureus* > *Salmonella* spp. = *E. coli*. The phenolic extracts contained the bioactive compounds catechin, quercetin, and rutin. Thus, phytochemicals in raisin extract have antibacterial properties; this plant-based extract, or its bioactive constituents, may represent a promising natural preservative or antimicrobial agent for the food industry or anti-infective drug.

**Keywords :** *Vitis vinifera* raisin, extraction, phenolic compounds, antibacterial activity

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