



## The Effect of Active Compounds in Raisins on the Inhibitory Activity and Free Radical-Scavenging Capacity of Fortified Yogurt

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### ABSTRACT

**Background:** Awareness has recently increased because of the reliance on plant extracts such as raisin extracts to enhance biological properties and produce functional products such as dairy products fortified with these extracts. **Methods:** In this study, the active compounds in aqueous and alcoholic extracts of black and yellow raisins were evaluated by GC-MS. The yogurt fortified with extracts was manufactured, and the diameter of the inhibition zone was estimated against *Staphylococcus aureus*, *Bacillus cereus*, *Escherichia coli*, and *Pseudomonas aeruginosa*. The free radical-scavenging capacity (DPPH%) was estimated at concentrations of 0, 5, 10, and 15 mg/ml. The letters also refer to antioxidants (A1) and (A2) in yogurt with alcoholic and aqueous extracts of black raisins and (A3) and (A4) in yogurt with alcoholic and aqueous extracts of yellow raisins. **Results:** The findings revealed the emergence of many active compounds, including alcohols, hydroxymethylfurfural, vitamins, alkanes, alkynes, phenolics, long-chain saturated fatty acids, organic acids, and other active compounds of different percentages. The highest inhibition zone of yogurt fortified with alcoholic extracts for black raisins was against *Bacillus cereus*, which reached 8, 20, and 23 mm, respectively, and increased in yogurt fortified with aqueous extracts for black raisins to 9, 21, and 24 mm, respectively. The free radical-scavenging capacities of the A1, A2, A3, and A4 samples were 38.17, 39.12, 39.46, and 39.89%, respectively, at a concentration of 15 mg/ml, whereas that of ascorbic acid was 85.90%. **Conclusion:** This study showed that consuming yogurt fortified with raisin extracts provides the body with functional benefits.

### Introduction

One may keep fruit for a long period in a healthy way by drying it. Dehydrated fruits also have a longer shelf life than do their frozen or canned counterparts. According to (Maki and Yasin, 2023), dried fruits that are kept properly may be enjoyed for many years. Raisins, dates, and figs are among the most popular dried fruits; they are rich in nutrients and bioactive compounds that are good for people's health (Alasalvar *et al.*, 2023). Raisin extracts have a pleasant flavor, are

naturally sweet, and are rich in many nutrients. Cholesterol, saturated fat, and total fat are all present at minimal levels. Cardiovascular health is enhanced by the quantities of soluble and insoluble fiber that are supplied by these foods (Maki and Yasin, 2023). Yogurts may be made healthier by the addition of raisin extracts, which are high in dietary fiber and polyphenols and are thought to enhance physiological functioning (Ning *et al.*, 2021). According to study of Maki and Yasin,