

## Brief Commentary

### Brief Commentary Based on Articles “Biological Activity Evaluation of Olive, Grape and Fig at Various Mixing Ratios”

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Kim et al. have published a study on biological activity evaluation of olive, grape, and fig at various mixing ratios [1]. The Mediterranean diet proved to be one of the healthiest diets in the world by the consumption of a wide variety of foods such as olive, legumes, cereals, nuts, fruits, vegetables, dairy products, fish, and wine [2].

Among the Mediterranean foods such as olive, grape, and fig to aid in explaining reduced mortality and morbidity experienced by people consuming a traditional Mediterranean diet [3].

Olive (*Olea europea* L.) is the major source of unsaturated fatty acids and other components, such as fat-soluble vitamins, polyphenols, chlorophylls, and phytosterols [4,5].

Grape (*Vitis vinifera* L.) is the major source of anthocyanin, flavonol, phenolic acid which have inhibitory effect on cardiovascular disease [6,7].

Fig (*Ficus carica* L.) is the major source of lanosterol and stigmasterol which have depressive effect on high level of serum cholesterol [8].

Thus, these Mediterranean foods provide several phytonutrients play a significant role against several chronic diseases [7].

So our study focused on synergy effect of olive, grape, and fig by determination of anti-oxidative and enzymatic activities. Four types

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of mixtures of Mediterranean foods were mixed in following ratios: olive-to-grape (OG), olive-to-fig (OF), and grape-to-fig (GF) at ratios of 1:1 (30 g of each) as well as olive-to-grape-to-fig (OGF) at a ratio of 1:1:1 (20 g of each). The total polyphenol and flavonoid contents along with DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging activity and ABTS (2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) radical scavenging activity,  $\alpha$ -glucosidase inhibitory activity and ACE (angiotensin-converting enzyme) inhibitory activity of the four aforementioned mixtures were determined.

In this study, the highest total polyphenol (26.25±0.20 mg TAE/g) and flavonoid contents (27.91±2.14 mg QE/g), were shown in OGF. The highest DPPH radical scavenging activity (98.72±0.38%) and ABTS radical scavenging activity (42.88±1.19%) were shown in OGF. The highest inhibitory activities of  $\alpha$ -glucosidase (79.75±0.15%) and ACE (88.61±0.08%) were appeared in OGF.

In conclusion, highest physiological activity levels (anti-oxidative and enzymatic activities) were observed in the olive, grape, and fig (1:1:1) mixture (OGF). Hence, its consumption in the regular diet may decrease metabolic disease such as hypertension, diabetic disease and cardiovascular disease.

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