Abstract

Viburnum opulus L. Fruit Extracts Protect Human Neuroblastoma SH-SY5Y Cells against Hydrogen Peroxide-Induced Cytotoxicity †

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Abstract: Viburnum L. is one of the most diverse genera of Caprifoliaceae family. There are 4 species of this genus in Turkey. One of them is Viburnum opulus L. The fruits of V. opulus have been used as an antidiabetic in Turkish folk medicine and a traditional drink named “gilaburu” in Middle Anatolia. Oxidative stress is involved in the cell degenerative changes in the pathogenesis of a wide variety of human chronic diseases, such as cancer. Some of the studies carried out on the V. opulus extracts revealed the presence of phenolic acids, flavonoids, hydroxybenzoic acids, tannins, coumarins, catechols, iridoid glycosides, antocyanins, and some others. Most of these polyphenols have various biological activities, including antioxidant, cancer chemopreventive, and anticancer activities. This study aimed to assess the in vitro antioxidant properties of the ethanol extract (VOE), decoction (VOD) and fruit juice (VOFJ) from the fruits of V. opulus against hydrogen peroxide (H2O2)-induced oxidative stress in human SH-SY5Y neuronal cells. Our study revealed that the VOE, VOD and VOFJ provided neuroprotection against H2O2-induced oxidative stress. In conclusion, VOE, VOD and VOFJ can be used as a functional dietary ingredient that might help in reducing health problems associated with various oxidative stress insults.

Keywords: Viburnum opulus; cancer prevention; hydrogen peroxide; SH-SY5Y

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