FREE RADICAL SCAVENGING ACTIVITY OF EXTRA VIRGIN OLIVE OIL AND OIL FRACTIONS USING 2,2-DIPHENYL-1-PICRYLHYDRAZYL (DPPH)

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ABSTRACT

The Mediterrenean diet is one of the healthiest diet among all and it has shown promising health benefits especially in cardiovascular disease and cancer. Olive and olive oil are the main source of fat in a Mediterranean diet and it was found that olive and olive oil consumption are beneficial to health such as lowering blood cholesterol, reduce risk on cancer and cardiovascular disease. A study on free radical scavenging activity of extra virgin olive oil (EVOO) and oil fractions was determined using 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay in three different solvents, ethyl acetate, dichloromethane and ethanol. The total phenolic content, chlorophyll pigment content and tocopherol content of EVOO and oil fractions were determined. The methanolic fraction has the highest antiradical efficiency of 0.0007 in ethanol whereas the lipidic fraction has the highest antiradical efficiency in ethyl acetate (0.0018). The direct measurement of free radical scavenging activity of EVOO in ethanol was found to have the highest antiradical efficiency of 0.0022. Therefore, it is feasible to apply direct measurement approach in determining free radical scavenging activity of extra virgin olive oil. The results of this study also showed that the polarity of solvents is important in determining the free radical scavenging activity of extra virgin olive oil and oil fractions.