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Natural Molecules for Healthy Lifestyles: Oleocanthal From Extra Virgin Olive Oil

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Abstract

Extra virgin olive oil (EVOO) is the main source of fat in the Mediterranean diet. Phenolic compounds of EVOO, in particular, secoiridoids, are minor components that have generated special interest due to their positive effects on human health, supported by several clinical trials. This review summarizes the most recent findings on the pharmacological properties and action's mechanisms of secoiridoid oleocanthal, focusing attention on inflammation, oxidative stress, cancer, neurodegenerative processes, and rheumatic diseases. Being of relevance to the clinical effects of EVOO intake, the bioavailability and biotransformation of EVOO polyphenols are addressed. Moreover, this review summarizes the factors that may influence the oleocanthal concentration in EVOO. With the growing incidence of age- and lifestyle-related diseases, the current data indicated that the administration of EVOO rich in secoiridoids may be helpful in the prevention or treatment of different pathologies with an inflammatory component. Although promising, the future raises several questions and challenges, which are discussed here. The real beneficial effects of olive oil phenols on human health need to be clarified in new, well-designed clinical studies.

Keywords: inflammation; neurodegenerative diseases; oleocanthal; rheumatic diseases.