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EXTRACTION METHODS AND BENEFITS FOR HUMAN HEALTH OF CAROTENOIDS

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Currently, the market has been looking for alternatives that optimize the use of raw materials in order to reduce agricultural losses, thus carotenoids have been increasingly applied in the pharmaceutical and food industries. Traditional extraction methods have non-polar reagents such as hexane, methanol, cyclohexane, ethers, or alcohols as solvents. However, some solvents present health risks and must be used with caution, therefore the use of green solvents such as ethanol, ethyl acetate, and isopropyl acetate can be important alternatives to obtain products free of toxic components, in addition to reducing environmental pollution. Using these solvents associated with new technologies, such as microwaves, ultrasound, and supercritical CO₂ extraction, can also be interesting to improve extraction efficiency. These compounds have antioxidant action that helps preserve cell membranes, eliminating the action of free radicals and acting to protect biological molecules, such as nucleic acids, proteins, carbohydrates, and lipids. *In vitro* and *in vivo* studies have evaluated the effects of these compounds and observed associations with reduced inflammation, breast cancer, obesity and insulin resistance. In addition, research has also linked the consumption of carotenoids in the diet to improved intestinal health. All these benefits demonstrate the potential application of carotenoids in foods and commercialization as a dietary supplement.

Keywords: Carotenoids; Extraction Methods; Green Solvents.

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