

## MULTICORE-MICROENCAPSULATION OF BIOACTIVE-RICH EXTRACTS, AN INNOVATIVE TECHNOLOGYFOR FUNCTIONAL FOOD INGREDIENTS

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Multicore-delivery of bioactive mixture through microencapsulation has several advantages over the intake of single component in the formulation, in which there is a synergistic antioxidant effect among different bioactives. Fruit pomace extract contains both hydrophobic and hydrophilic components. Studies are taking critical approach to develop unique multicore microencapsulation with fruit pomace extract and other natural bioactives to promote high synergistic effects and enhance bioactivity and bioavailability. Study is to develop microcapsules by double emulsion (w/o/w) and complex coacervation technology. The optimum proteins-polysaccharides shell model is to select food-grade proteins and polysaccharides pair to protect efficiently bioactives in core against oxidation and degradation. The optimum shell model has high potential to increase their bioavailability of the fruit pomace extract, and control the rate of bioactive release to reach the intended destination. Multicore microencapsulation can be considered as unique emerging technology to develop new generation of functional food ingredients, in which the multicore formulation of fruit pomace extract can promote high synergistic antioxidant effects. Multicore microencapsulation can effectively enhance bioactivity, protect against oxidation, and mask their odor and bitter taste, promote high bioavailability. The multicore microencapsulation will pave the way for the development of phytochemical-rich extract as natural functional food ingredients from many other by-product extracts. Multicore microencapsulation technology and process facilitate bioactive mixture extracted from agricultural by-products to convert into value-added health-promoting food ingredients with high bioactivity, stability and bioavailability.

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