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Microencapsulation of Saffron Anthocyanins using β glucan and β cyclodextrin: Nutraceutical, Morphological, Structural and the release behavior of capsules during In-vitro digestion.

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Abstract

In the present study, the saffron anthocyanins were encapsulated in β -glucan and β -cyclodextrin by spray drying technique to achieve their stability under adverse gastro-environmental conditions. The microcapsules were subjected to simulated gastric conditions and release behavior of monomeric anthocyanins, antioxidants and phenols were studied. The structural properties of microcapsules were analyzed by SEM and ATR-FTIR spectroscopy. The particle size distribution, density, color, encapsulation efficiency and powder yield of samples were also evaluated. A characteristic band at 1700cm^{-1} by FTIR and specific enclosed particles in the cavities of wall material were observed from the micrographs of SEM that confirmed the incorporation of anthocyanins in the microcapsules. The higher content of anthocyanins, antioxidants and phenols in the intestinal conditions revealed the protection of core material from adverse conditions of

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