



## ENCAPSULATED BIOACTIVES FOR THE FOOD INDUSTRY

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The modern food industry is facing the challenges associated with the production of high-quality food with enhanced safety, improvement of process efficiency and reduction of environmental pollution. The inclusion of bioactive compounds with potential health benefits, such as vitamins, probiotics, minerals, polyphenols, omega-3-fatty acids, and phytosterols into the foodstuff became the regular practice in contemporary industrial production of food. Most of these compounds are sensitive to the external conditions and influences that might cause the loss of functionality or degradation of an ingredient before it has time to act. In this sense, encapsulation, a process to entrap an active compound within a carrier material, gained great interest as a way to overcome the poor stability of bioactives and their susceptibility to adverse external factors during food processing, storage, and consumption. It provides a physical barrier between active compounds and the environment and can prevent reaction with other components in food products such as oxygen or water. Further on, it can be used to mask unpleasant feelings during eating, such as bitter taste and astringency of polyphenols. Encapsulation is also a useful tool to make delivery of bioactive molecules (e.g., antioxidants, minerals, vitamins, phytosterols) and living cells (e.g., probiotics) at the desired place or within an appropriate time possible.

The paper gives an overview of different techniques and carrier materials commonly used in the food industry for encapsulation of bioactive molecules and presents several examples of encapsulated bioactives and cells developed in our laboratories to be used for the production of value-added food.

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