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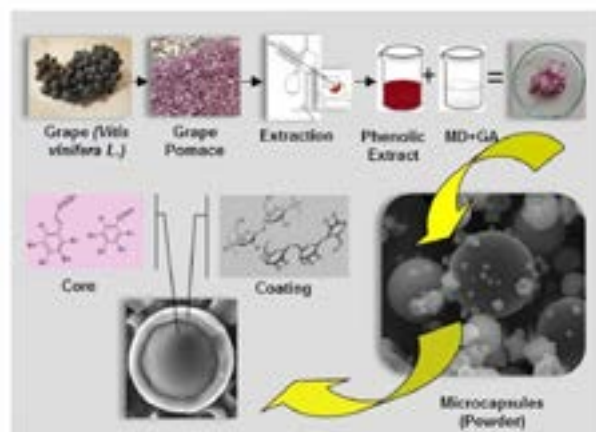
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Microencapsulation of polyphenols for functional food development

Fruit originated phenolic compounds have a high demand owing to their bioactive roles [1]. Although the incorporation of these compounds into the food products are important, their sensitivity against physicochemical factors create a great challenge [2]. The present study investigates microencapsulation of the phenolic compounds to provide a solution for this problem by improving their stability and protecting them against oxidation, light, moisture and temperature. The effects of spray drying conditions on microcapsules obtained from grape pomace extract were comprehensively investigated for the first time. The results achieved in the current work indicated that the use of maltodextrin and gum arabic together for encapsulation of phenolic compounds, which were extracted from grape pomace, have provided better results than that of using maltodextrin alone as a coating material. The most effective yield with better hygroscopicity, phenolic content and antioxidant activity was accomplished at an inlet temperature of 140°C, using mixture of maltodextrin DE4-7: gum arabic in a ratio of 8:2 and a phenolic extract (core):coating material in a 1:1 ratio. Thus, winemaking by-products having little or no commercial value can be

converted into the value added products that contain natural antioxidants (polyphenols) and they can be used instead of synthetic antioxidants, which may have harmful effects on human health [3]. The microcapsules produced by utilizing these optimum conditions have the potential to able to add polyphenols as functional ingredients into a range of foods and also to improve their storage stability that have an immense impact in industry and health sector.



Biography

Aysu Tolun has received her BSc and MSc degrees from the department of Food Engineering at Ankara University in 2000 and 2005, respectively. She worked at quality control departments of several food industries for 10 years. Later on she worked at the Project Information and Support Unit of Ankara University for three years as an expert. She earned her PhD degree from Ankara University in 2016 with her thesis on microencapsulation of bioactive compounds. Zeynep Altintas is the head of Biosensors and Receptor Development Group at the Technical University of Berlin. She serves as an expert reviewer for EU and Wisconsin Groundwater Coordinating Council (USA) funded projects, in addition to acting as a reviewer for numerous important journals in her areas of expertise. She is also a member of Royal Society of Chemistry (RSC).

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