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Role of Hydroxyapatite Crystals loaded with an active compound in the shelf life extension of food products

Hydroxyapatite (HA) is considered as one of the most potent bioceramics used in several applications, particularly for dental and orthopedic fields. Due to its structural and chemical composition, till now HA has been widely applied as biomaterial to fabricate artificial bonesubstitute or scaffold for orthopedic and periodontal reconstruction or as a drug vehicle of antibiotics to treat bone-associated disease [1, 2]. Thanks to its interesting properties such as biocompatibility, degradability, and biomimetic dimensions, hydroxyapatite could be used as a potential carrier for active compounds: the use of hydroxyapatite crystals as carriers of an antioxidant or antimicrobial compound in an active packaging could protect the active compound from processing and storage conditions, keeping its properties intact. Based on the above, hydroxyapatite was studied as a suitable carrier for antimicrobial and or antioxidant compounds for food application. In particular, flavonoids as quercetin

glycosides were chosen as active substances for their well-known antioxidant properties and their potential antimicrobial activity [3, 4]. Thus a preliminary study on the HA absorption properties versus quercetin glycosides compounds and their antioxidant and antimicrobial properties were carried out. finally, hydroxyapatite crystals complexed with quercetin glycosides were loaded into alginate-based edible coating and its effect on food shelf life extension was evaluated.

Speaker Biography

Francesca Malvano, a Post-doctoral Researcher in the Food Technologies, at the Department of Industrial Engineering of the University of Salerno (Italy). I'm PhD in Industrial Engineering and a Master Graduate in Food Engineering. My studies are related to food technologies, food processing, food quality and safety.

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