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A Lipid Extract Increases the Viability of Encapsulated *Lactobacillus casei* during Heat Treatment and Simulated Gastrointestinal Passage

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Probiotics are the bacteria that can provide health benefits to the consumers and they are suitable to be added to a variety of foods. In this research, viability of immobilized *Lactobacillus casei* in alginate with or without sea buckthorn lipid extract were studied during heath treatment and with an *in vitro* gastrointestinal model. The characterisation of the lipid extract was also done using the UV-Vis spectrometry (UV-Vis), high-performance liquid chromatography photodiode array detection method (HPLC-PDA), gas chromatography coupled with mass spectrometry (GS-MS) and Cryo scanning electron microscopy (Cryo-SEM). During the heat treatment, the entrapped probiotic cells proved higher viability even at temperatures above 50 °C (> 6 log CFU/g). The rich in monounsaturated fatty acids sea buckthorn fraction improve the *in vitro* digestion passage regarding the probiotic viability. The survival of the probiotic cells was 15 % higher after 2 h in the acidic medium of the simulated gastric fluid in the sample where *L. casei* was encapsulated with the sea buckthorn extract compared with the samples where no extract was added. Thus, this study may be effective for the future development of probiotic-supplemented foods as foods with health welfare for the consumers.

Biography:

Pop Oana Lelia (33-year-old) is a Teaching Assistant at the University of Agricultural Science and Veterinary Medicine from Cluj and works at the Faculty of Food Science and Technology as academic since 2016 and researcher since 2012. Her Ph.D. theses were developed on probiotics encapsulation, during that time she worked for 6 months in Germany in an enterprise on the subject. Her research work is related with fermentation, nanoparticles, plant extracts besides the main subject - pro and prebiotics encapsulation.