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Survival performance of *Enterococcus durans* 39C using prebiotic-polymeric blend as an encapsulation matrix

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The use of prebiotic material for probiotic microencapsulation is presented here. The objectives are to enhance its survival rate, colonic release, and stability of these probiotic cultures in digestive condition during storage time. Nine types of biopolymers (alginate-psyllium) blend with different concentration of prebiotic; (inulin or fenugreek) were used as candidate for microencapsulation matrix. One strain of probiotic candidate, *Enterococcus durans* 39C was used in this study. The microencapsulation of this strain with the respective polymer blend was performed by using a simple extrusion method. All blend of formulations have recorded high encapsulation efficiency at value >98%. The survival rate of viable probiotic cells under simulated digestive conditions was also high with value above 47% as compared to non-microencapsulated cells. These nine gel formulations also displayed the high survival rate of viable probiotic cells during storage time (28 d). Their release occurred after 2 h in colonic condition and sustained until 12th h of incubation period. An increase of prebiotic effect value added was observed in incorporated inulin and fenugreek formulations, hence, an indication for their suitability as matrix material for probiotic encapsulation.

Biography

Norhafizah Abdullah is an Associate Professor in Department of Chemical and Environmental Engineering, University Putra Malaysia. She has more than 15 years of experience in academia and very active in teaching, research and technical consultation in the area of Biochemical Engineering.

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