

MICROENCAPSULATION OF PROBIOTIC BACTERIA FOR GASTROINTESTINAL DELIVERY

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Orally administered live probiotic bacteria have gained popularity in recent years as potentially beneficial health supplements. However, these bacteria require additional protection if they are to survive passage through the low pH environment of the stomach after oral administration [1]. This talk will describe the use of alginates for microencapsulation of live probiotic bacteria. It will discuss the methods of microencapsulation, methods of drying alginate capsules (tray drying, freeze drying, fluidized bed drying), coating approaches (formation of single layer or multilayer coats; materials that can be used to coat alginates), as well as in vitro experimentation to demonstrate the ability of these matrices to protect live bacterial cells in gastric juice and target release to the intestine [2-4]. The efficiency of coating was evaluated using confocal microscopy with fluorescently-labeled chitosan. The mechanism of live bacteria protection from stomach acid was established using confocal microscopy with model bacteria labeled with two pH-responsive fluorescent dyes [4]. The influence of microencapsulation on the survival of probiotics in fruit juices and product storage stability will also be discussed [5-7].

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