E. coli Nissle microencapsulation in alginate-chitosan nanoparticles and its effect on Campylobacter jejuni in vitro

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Abstract:

Microencapsulation enhances the oral delivery of probiotic bacteria. In this study, the probiotic Escherichia coli Nissle 1917 (EcN) was microencapsulated using alginate and chitosan nanoparticles. The result showed 90% encapsulation yield of EcN, and the encapsulated EcN displayed significantly (P < 1.5-fold) of genes encoding chemokines, toll-like receptors, interleukins, and tumor necrosis factors. In conclusion, the alginate-chitosan microcapsule can provide effectual platform to deliver probiotic EcN and thereby can reduce the Campylobacter infection in chickens and humans.

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