CHITOSAN MICROPARTICLES AS ORAL DELIVERY SYSTEM OF RELAXING PEPTIDES

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Bioactive peptides can prevent or control diseases and exert a variety of activities including relaxing function. Microencapsulation of bioactive peptides may constitute a valuable process for preserving their integrity during processing and digestion. Chitosan is a prominent natural biomaterial that is used in delivery systems. In the present study, chitosan microparticles loaded with a relaxing peptide (peptide sequence YLGYLEQLLR) were prepared by ionic gelation, with a mean size of 1.8 μm.

This delivery system was characterized in terms of particle size analysis, Fourier Transform Infrared, peptide encapsulation efficiency and release, mucoadhesion, and bioavailability and cytotoxicity through in vitro assays. The results demonstrated that ca. 86% of the peptide was loaded into the chitosan microparticles. The microparticles showed to be biocompatible and allowed sustained release along 30 min.

This system may be a potential candidate as oral delivery system to carry relaxing peptides or other bioactive peptides.