

CHITOSAN MICROPARTICLES 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 [1, 2]. Chitosan is a prominent natural biomaterial that is used in delivery systems [3-6]. In the present study, chitosan microparticles loaded with a relaxing peptide were prepared by ionic gelation, with a mean size of $1.813 \pm 0.802 \mu\text{m}$, zeta potential $43.49 \pm 9.09 \text{ mV}$ and polydispersion index 0.89. This delivery system was characterized in terms of particle size analysis, Fourier Transform Infrared, peptide encapsulation efficiency, 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. Cell viability was measured by MTT assay and showed an absence of cell toxicity following exposure into formulation contact. Peptide-loaded chitosan microparticles and peptide-loaded chitosan microparticles into guar-gum films showed a faster and distinct permeability than a free peptide. So, peptide-loaded chitosan microparticles and peptide-loaded chitosan microparticles into guar-gum films might be a promising carrier for relaxing peptide buccal administration.

References

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