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Chitosan nanoparticles for drug delivery applications

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Chitosan has been reported to be biocompatible and biodegradable, and has been applied in many different drug formulations ranging from gels to tablets, capsules and micro- and nanoparticles. In this study, chitosan micro- and nanoparticles have been made by using tripolyphosphate (TPP) as a cross-linking agent. TPP can possess up to five negative charges, which can interact with the positively charged chitosan. When utilizing micro- and nanoparticles for drug delivery applications, it is important to have control over factors that will affect the drug release rate such as the size and compactness of the particles. In addition, it is essential that the micro- and nanoparticle suspensions remain stable over a reasonable amount of time. In this study, chitosan nanoparticles are prepared at different conditions, and characterized with respect to size, compactness and stability. A novel method of estimating the compactness of the nanoparticles is employed, and it was found that the stability of the nanoparticle suspensions is influenced both by the size and the compactness of the particles.

Biography

Anna-Lena Kjøniksen has a PhD from the University of Oslo, Norway. She is currently Professor of Material Technology at Ostfold University College, Norway. She has published more than 100 papers in peer-reviewed international journals within the fields of polymer science, nanomaterials, and pharmaceutics.

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