

DEVELOPMENT OF POLYELECTROLYTE COMPLEX MICROPARTICLES FOR THE ENCAPSULATION OF ISONIAZID

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ABSTRACT

Polyelectrolyte complex microparticles of different sizes were prepared by optimising the ratio of chitosan and sodium carboxy methyl cellulose (SCMC). Effect of various factors like amount of surfactant, concentration of polymer on the formation and size of the microparticles were investigated. The microparticles formed were pH-responsive. These microparticles were used as carrier for isoniazid. The loading efficiency and release behaviour of loaded microparticles were found to be dependent on the amount of crosslinker used, concentration of drug and time of immersion. Maximum drug loading efficiency was observed at higher immersion time. The release rates of isoniazid at different pH were investigated and compared. The sizes of the microparticles were investigated by scanning electron microscope. FTIR study indicated the successful incorporation of isoniazid into the microparticles. Microparticles were further characterised by Differential scanning calorimetry and X-ray diffraction study. The present work aims at to produce microparticles as antitubercular drug carrier by using chitosan and SCMC as polymers, glutaraldehyde as crosslinker and sunflower oil as reaction medium.