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Drug Delivery

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Correlation Between Gel Structural Properties and Drug Release Pattern in Scleroglucan Matrices

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Abstract:

The drug delivery behavior of scleroglucan hydrogels was correlated with the structural features found by means of steady-state fluorescence studies. Theophylline at 0.4% in weight was used as the model drug and its release was measured using a Franz cell device. The results were fitted with a semi-empirical power law equation, finding significant differences between the 0.5% and higher than 0.8% scleroglucan concentrations (w/w). Four molecular fluorescent probes were used to test microenvironmental properties of the gel cavities, which will play a key role on the release of the pharmaceutical drugs. The results found by the fluorescence analysis are in good agreement with the ones obtained by release kinetics.

Keywords:

Drug Release, Fluorescent Molecular Probes, Hydrophilic Matrices, Scleroglucan

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