

5th World Congress on

Diabetes & Metabolism

November 03-05, 2014 Embassy Suites Las Vegas, USA

Dietary fiber psyllium based hydrogels for use in insulin delivery

Nirmala Chauhan

Himachal Pradesh University, India

The present article is related to the development of psyllium based oral insulin delivery systems that could release insulin in a controlled and sustained manner. Psyllium is a medicinally important gel, forming glucose lowering dietary fiber and drug delivery system developed by its functionalization will have the double potential of curing diabetes. Psyllium and acrylamide/methacrylamide based hydrogels were prepared, and the effect of pH on the release dynamics of insulin from drug loaded hydrogels has been studied to evaluate the drug release mechanism. Non-Fickian diffusion mechanism has been observed for the release of insulin in the pH 7.4 buffer for which the rate of drug diffusion and rate of polymer chain relaxation are comparable. Therefore, drug release depends on two simultaneous rate processes, water migration into the device and drug diffusion through continuously swelling hydrogels. In each release medium, the earlier stage of the diffusion coefficient has been observed more than the late time diffusion coefficient.

nirmalchauhan46@gmail.com