H R Patel et al., Polym Sci, 3:3
DOI: 10.4172/2471-9935-C1-002

Formulation and evaluation of oral mucosal casein salt film for the anti-diabetic activity

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To develop the novel formulation in the era of modern drug delivery system with their biodegradable drug delivery, we have prepared the oral mucoadhesive formulation from the protein material like salts of casein. It has shown good compatibility and desire drug release with no side effect. Different concentration of sodium caseinate, calcium caseinate was added in a polymer mixture to prepare the films were evaluated for physical parameters. *In-vitro* diffusion studies of the patches were performed and the samples were analyzed by HPLC method. The cumulative percent drug release was plotted against time and the slope of the linear portion of the curve estimated by first order, korsemeyer's equation and higuchi kinetics. The IR spectral data and DSC studies showed that there was no interaction between drug and utilized polymers. All the films were found to be flexible, smooth surface texture, transparent and uniform in weight and thickness. Among all formulations, formulations F4 shows 93.24% drug release at the end of 12 hrs. The films prepared from casein salt have shown a diffusion controlled release. Hence these formulations were further subjected for in-situ diffusion studies and *in-vitro - in-situ* correlation was carried out. Different kinetic models were used for the determination of release pattern. The present investigation resulted in the development of protein film for the drug delivery with good bioadhesive strength and further there is a scope to conduct the *in-vivo* diffusion studies by using various experimental animal models and correlate the *in-vitro- in-vivo* diffusion parameters.

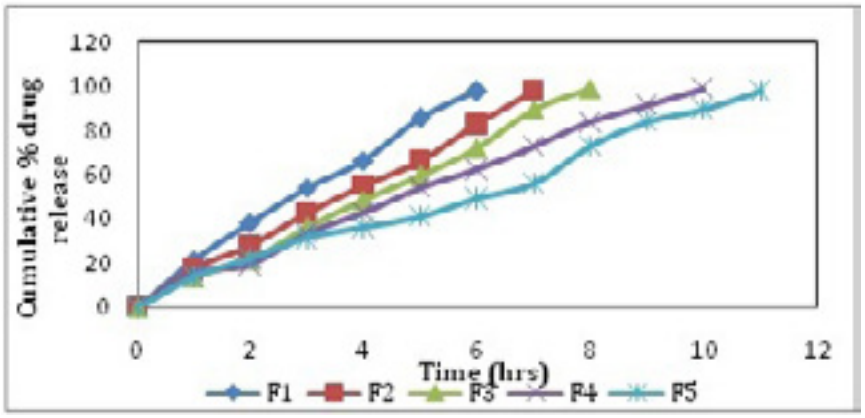

Figure: *In-vitro* drug release profile of insulin film

Biography

Dr. H R Patel has completed his PhD study from S. K. P. C.P. E. R. Ganpat University (Pharmaceutical science) in Novembwe, 2009. He has worked on research Project in Polymer and Pharmaceutical Sciences funded by Government of India. He has 25 National and Interntional Research paper Publication. His topic of interest is in Formulation and Development of Sustained and Controlled release Drug Delivery System for oral mucosal drug delivery.

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