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Achievement of a chronological release profile of Etodolac from coated bilayer tablets

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Abstract

In latest years, excipient development is become essential part of research in pharmaceutical drug delivery because it impacts the formulation development and drug delivery process. Repeated dose medication usually maximizes adverse effects, while sustained release systems did not offer a fast onset of action. The aim of this study is to formulate Etodolac to enable pulsatile and sustained drug release patterns, which was chronologically more suitable as an anti-inflammatory drug.

Eudragit RSPO, Eudragit RLPO, and Hydroxypropyl Methylcellulose (HPMC K15M) were added in the sustained release layer and tried in different ratios. Croscarmellose sodium or sodium starch glycolate were used as superdisintegrants for the fast release layer offering the loading dose for rapid onset of drug action. Bilayer tablets were successively coated with Opadry II, HPMC K4M and HPMC E5 (1:40), and Surelease. All formulations complied with the Pharmacopeial standards for post-compression parameters. The coated bilayer tablet showed pulsatile and sustained release effects in rats. The licking time and swelling degree were tested and results demonstrated significant difference ($P < 0.05$) between the sustained anti-inflammatory action of formulation C1 compared to other groups.

Therefore the new chronological design could provide a consistent drug release over 24 h with good protection against associated symptoms of gastric release.

Biography:

Ehab Rasmy Bendas is Professor of Pharmaceutics, Pharmaceutical technology and Pharmacy Practice at the Faculty of Pharmaceutical Sciences & Pharmaceutical Industries, Future University in Egypt. He got his Master degree & Ph.D. in Pharmaceutics from Faculty of Pharmacy, Cairo University. He was Post-doctoral research fellow at Oregon State University, USA. His research interests are focused on nanotechnology, drug delivery and pharmacokinetics.

Speaker Publications:

1. "Fluconazole-loaded solid lipid nanoparticles topical gel for treatment of pityriasis versicolor: Formulation and clinical study", Drug Delivery/ Volume 25, Issue 1
2. "A new design for a chronological release profile of etodolac from coated bilayer tablets: In-vitro and in-vivo assessment", Journal of Advanced Research/ Volume 15
3. "Drug Interchangeability of Generic and Brand Products of Fixed Dose Combination Tablets of Sofosbuvir and Ledipasvir (400/90 mg): Employment of Reference Scaled Average Bioequivalence Study on Healthy Egyptian Volunteers", Clinical Drug Investigation/Volume 38, Issue 1
4. "Assessment of cubosomal alpha lipoic acid gel efficacy for the aging face: A single-blinded, placebo-controlled, right-left comparative clinical study", Journal of Cosmetic Dermatology/Volume 16/Issue 3
5. "Quantification of sofosbuvir and ledipasvir in human plasma by UPLC-MS/MS method: Application to fasting and fed bioequivalence studies", Journal of chromatography. B, Analytical technologies in the biomedical and life sciences 1028

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