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Formulation, Evaluation and Effect of 3 New Polymers and Co-Excipients on *In-Vitro* Controlled Release Patterns of Flurbiprofen Matrix Tablets

Syed U. JAN [1]*, Gul M. KHAN [2], Shafi MUHAMMAD [1], Haroon KHAN [2], Kamran A. KHAN [2] & Kifayat U. SHAH [2]

[1] *Department of Pharmacy, University of Balochistan, Quetta. Pakistan*
[2] *Faculty of Pharmacy, Gomal University Dera Ismail Khan (KPK) Pakistan*

***SUMMARY*. The main objective of this study was to investigate controlled release polymeric matrix tablets of Flurbiprofen using three newly synthesized polymers (Poly (glycolide), PGA-co-Caprolactone, PGA-co-Pentadecalactone) and one grade of Ethocel (FP10 premium) for their release rates and patterns in a suitable medium. On the release rate and pattern of Flurbiprofen from the polymeric matrices, the effect of several co-excipients were also studied. Three different drug to polymer ratios (D: P) were used for the preparation of the matrix tablets *i.e.* 10:1, 10:2, and 10:3 and the effect of co-excipients was checked only on one D: P ratio of 10:3. Phosphate buffer pH 7.2 was used as dissolution medium. Different Kinetic models were applied to investigate the release mechanism. The release rates of Flurbiprofen matrix tablets were compared with conventional Flurbiprofen and SR tablets. It was concluded from this study that FP grade of Ethocel can extend the drug release as compared to other polymers. The three different co-excipients showed a tremendous enhancing effect on drug release form polymeric controlled release tablets.**

KEY WORDS: Controlled release matrix tablets, Co-excipients, Direct compression, Flurbiprofen, Polymers, Release Kinetics.

* Author to whom correspondence should be addressed. *E-mail:* suj55@yahoo.com