

Research Paper

FORMULATION DEVELOPMENT AND EVALUATION OF BILAYER MATRIX TABLETS OF DOXOFYLLINE

Sourav Sharma*, Dilip Agrawal, Mohit Khandelwal

Dept. of Pharmaceutics, Mahatma Gandhi College of Pharmaceutical Sciences, Jaipur – 302022

Oral administration remains the gold standard route for executing drug delivery across global pharmaceutical manufacturing due to its manufacturing efficiency, flexible dosing precision, extended chemical stability, and high patient compliance. To solve these drawbacks, Controlled Release Oral Drug Delivery Systems (CRDDS) have been engineered to maintain a steady therapeutic plasma concentration within a narrow window, minimizing dangerous peak-and-valley drug levels.

The optimized bilayer formulation provides a predictable biphasic delivery profile that reduces dosing frequency and minimizes extra-pulmonary side effects, demonstrating a highly viable alternative to current single-phase commercial therapies. The primary goal of this research was to design, formulate, and optimize an innovative bilayer sustained-release matrix tablet of Doxofylline. The dosage form features a biphasic release profile consisting of an immediate-release (IR) loading dose layer and a sustained-release (SR) maintenance layer to provide effective round-the-clock management for bronchial asthma and chronic obstructive pulmonary disease (COPD)

Key words: Bronchial asthma , Doxofylline, Bilayer tablets, superdisintegrants.

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