



Development and Characterization of Ternary Solid Dispersion Systems of Olmesartan Medoxomil

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SUMMARY. The ternary solid dispersion systems of poorly water soluble olmesartan medoxomil (OLM) were prepared by conventional kneading method in order to improve its physicochemical performance. A 3² full factorial design approach was employed to optimize influence of concentration of polyvinylpyrrolidone K30 (PVP) and poloxamer 407 (PLX) on physicochemical characteristics of these dispersions. All formulations were characterized by XRPD, DSC and dissolution studies. Physical studies revealed complete loss of crystallinity and formation of uniform molecular dispersion of OLM in its ternary systems. All dispersion systems showed significant improvement in dissolution profile in comparison to pure drug alone ($p < 0.001$). The optimized formulation provided superior solubility and dissolution behaviour (F1; DP₅: 68.43 ± 2.8 %) of OLM suggesting optimum ratio of carrier system. The kinetic study of dissolution displayed to follow the Korsmeyer-Peppas model ($r^2 = 0.9835$).

KEY WORDS: Factorial design, Kinetic study, Kneading, Olmesartan medoxomil, Ternary systems.

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