ABSTRACT

OPTIMIZATION FORMULA LEVOFLOXACIN TABLET WITH PVP K-30 AS BINDER AND VIVASOL AS DISINTEGRANT

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Drug is mostly used via oral administration. One of dosage forms that is mostly used is tablet, because its shape is efficient, very practical, and ideal for orally administration. Levofloxacin is a quinolone class of broad-spectrum antibiotics. Levofloxacin is used to treat bacterial infections that occur in the respiratory tract, urinary tract, and skin. Based on the compactibility test, levofloxacin is brittle fractue therefore it inflicts problem in its formulation. This research aims to determine the effect of PVP-K- 30 as binder and Vivasol as disintegrant against physical quality (hardness, friability, and disintegration time) as well as dissolution rate of tablet using wet granulation method. This research uses Factorial Design 2^2 which is a factorial experiment with 2 factors (PVP K-30 and Vivasol) and 2 levels (2% and 4%), so that four formulas were obtained. The results showed that the enhancement of PVP K-30 levels increased tablet hardness, lowered tablet friability, as well as disintegration time of tablet, and it also increased the % (percentage) of levofloxacin tablet dissolved. While the enhancement of Vivasol increased tablet hardness, it did not affect tablet friability, and it lowered disintegration time of tablet, as well as the % (percentage) of levofloxacin tablet dissolved. Levels of PVP K-30 and Vivasol which produce physical quality (hardness, friability, and disintegration time) as well as optimal dissolution rate were found as the result of overlaid contour plot by using Minitab 17 . Evaluation of tablet physical quality (hardness, friability, and disintegration time) as well as optimal dissolution rate showed that within the “feasible area” of the design space, the tablets met the specifications.

Keywords : Levofloxacin, PVP K-30, Vivasol, wet granulation, factorial design.