

PENGARUH L- ARGININ DALAM DISPERSI PADAT ALOPURINOL – PVP K-30
TERHADAP LAJU DISOLUSI ALOPURINOL

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ABSTRACT

Allopurinol is a commonly used drug in the treatment of chronic gout or hyperuricemia. Allopurinol is practically insoluble in water, but it has good penetration on the biological membrane, so that dissolution rate is the rate limiting step of drug absorption process and determine poor bioavailability after oral administration. Solid dispersion could enhance dissolution rate of allopurinol. PVP K-30 is one of matrix that usually used in solid dispersion. Combination between PVP K-30 as matrix and L-Arginin could enhance dissolution rate of allopurinol with ion interaction between allopurinol-L-Arginin to be a soluble substance easily in water.

The aim of this study was to enhance dissolution rate of allopurinol preparing into solid dispersion of PVP K-30 combination with the addition of LArginin could increase drug wettability, and happen ion interaction between allopurinol-L-Arginin when it contact with dissolution medium so that the dissolution rate of allopurinol could increase. Solid dispersion system were prepared by solvent method with ratio allopurinol-PVP K-30-L-Arginin (5:5:6,4) so is called ternary solid dispersion, allopurinol-PVP K-30 (5:5) and allopurinol-L-Arginin (5:6,4) so is called binary solid dispersion. That is compared with allopurinol substance, binary physical mixture and ternary physical mixture. Evaluation were carried out by dissolution test of solid dispersion of allopurinol-PVP K-30-L-Arginin, physical mixtures and allopurinol substance. The result showed that solid dispersion of allopurinol-PVP K-30-L-Arginin (5:5:6,4) give the highest dissolution rate compared to the physical mixture and allopurinol substance.

Keyword : Allopurinol, L-Arginin , solid dispersion, PVP K-30, and
Dissolution rate