# ABSTRACT

## Characterization And Dissolution of Drug-Cyclodextrin Inclusion Complexes Prepared By Microwave Irradiation And Co-precipitation Methods

## *Literature Review*

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Solubility is one of the important parameters to achieve the desired drug concentration when it reaches the systemic circulation so that it provides a pharmacological response. A drug that has poor solubility causes the absorption of the drug to be slow so that its bioavailability is low. The formation of inclusion complexes is one way to increase the solubility of drugs that are difficult to dissolve in water. Inclusion complexes can be formed by a variety of methods. The purpose of this study is to examine differences in the results of the characteristics and dissolution of the inclusion complex formed using the microwave irradiation and co-precipitation methods. This study uses the literature review method by reviewing 7 scientific articles containing the results of characterization (infrared sprectrum, melting point, difractogram and particle morphology) and the dissolution of the inclusion complex. Based on the comparison of the results of characterization and dissolution, the inclusion complex created by the microwave irradiation method shows characteristics that are superior to the co-precipitation method. The dissolution rate of the inclusion complex made by the microwave irradiation method is higher than the inclusion complex made by the co-precipitation method. The percentage of drug release in the 60th minute from the inclusion complex made by the microwave irradiation method reaches 95-100%. Based on the results of the characteristics and dissolution, the microwave irradiation method is a superior method in forming the inclusion complex than the co-precipitation method.

**Keywords :** Inclusion complex, β-cyclodextrin/Hydroxypropil-β-cyclodextrin, characterization, dissolution rate, microwave irradiation method, co-precipitation method.