

ABSTRACT**CHARACTERIZATION OF INCLUSION COMPLEX FORMATION
BETWEEN *PARA* METHOXY CINNAMIC ACID WITH β -
CYCLODEXTRIN
(MICROWAVE IRRADIATION METHOD)****Nabella Rizki Amalia*****Abstract :***

para methoxy cinnamic acid (pMCA) is a major substance synthesized from *Kaempferia galanga* Linn. It has an analgesic effect but poor solubility in water, therefore it was formed as inclusion complex to enhance its solubility. The aims of this study was to investigate characterization and the dissolution rate of inclusion complex between (pMCA) and (β -CD) prepared by microwave irradiation method. The inclusion complex was reacted in 1:1 stoichiometry and used chloroform as a solvent using microwave for four minutes and 80 % of power (400 watt). The inclusion complex was characterized by some analytical method such as X-Ray Diffractometer (XRD), Fourier Transform Infrared Spectroscopy (FTIR), and Differential Thermal Analysis (DTA). The formed inclusion complex was proven having different physical properties compared to its single substance and its physical mixture with a higher yield of product (96,47 %) and shorter time of reaction than the conventional method. Inclusion complex dissolution rate profile showed a higher slope and ED₆₀ parameters compared to physical mixture and pMCA, from these parameters above it proved that inclusion complex was formed and the dissolution rate of pMCA was increased.

Keyword :

Inclusion complex, *para*-methoxy cinnamic acid, β -cyclodextrin, characterization, dissolution rate, microwave irradiation method.