Ferulic acid (FA) is a highly effective compound with many activities. However, recent studies have revealed that ferulic acid presents pharmacological properties beyond those related to its antioxidant activity. TAF1 has an additional alkyl group so it is more lipophilic than FA so TAF1 is more difficult to dissolve than the FA so in this study also made the formation of inclusion complex with β-cyclodextrin to increase its solubility. In this study the synthesis of TAF1 through the mechanism of nucleophilic acyl substitution by using stirring at room temperature. The antioxidant activity test was performed by radical capture method of radical 1,1-diphenyl-2-picrilhidrazil (DPPH) using alpha tocopherol comparator. The result of antioxidant activity test of ferulic acid was found% b / b equal to 42,800 while result of antioxidant activity test of TAF1 got % b / b respectively equal 1,956. From the characterization results with DSC, XRD and FT-IR support the evidence that the inclusion complex of TAF1-β-cyclodextrin prepared by the slurry method has been formed. From the slope rates obtained, the dissolution rate of the TAF1-β-cyclodextrin inclusion complex increased 2.4 times compared with the TAF1 dissolution rate.

Keyword : antioxidant, derivates ferulic acid, in silico, inclusion complex, DPPH method