# ABSTRACT

## EFFECT OF COCRYSTAL QUERCETIN – ASAM MALONAT FORMATION BY USING SOLVENT EVAPORATION METHOD ON SOLUBILITY AND DISSOLUTION RATE OF QUERCETIN

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Quercetin is bioflavonoid group which has been developed for health purpose due to its several beneficial biological effect. Quercetin is classified as class II BCS which has low solubility but has good permeability. Cocrystal can be used as method to increase solubility and dissolution rate of various poorly water soluble drug.

The purpose of this research is to increase solubility and dissolution rate of quercetin by cocrystalization. Cocrystal was formed by incorporating quercetin and malonic acid at different ratios ( 1:1 ; 1:2 ; 1:3 ). Cocrystal quercetin – malonic acid was prepared by solvent evaporation method. The solubility medium was buffer citric acid – NaOH (pH 5,0 ± 0,05), maintained at 30 ± 0,5 ˚ C. Solubility study was done for 180 minutes. The dissolution medium was 900 mL buffer citric acid – NaOH (pH 5,0 ± 0,05) added with sodium lauryl sulfate (SLS) 2%. Dissolution study was conducted at temperature 37 ± 0,5 ˚ C for 60 minutes at stirring rate 180 rpm.

The result showed that the solubility of cocrystal quercetin – malonic acid (1:2) increased 1,8 times higher than quercetin. Dissolution rate of cocrystal quercetin – malonic acid (1:2) increase 1,2 times higher than quercetin.

**Keyword** : quercetin, malonic acid, cocrystal, solubility, dissolution