

ABSTRACT

**EFFECT OF COCRYSTAL QUERCETIN-MALONIC ACID
FORMATION BY USING SOLVENT-DROP GRINDING
METHOD ON SOLUBILITY AND DISSOLUTION RATE
QUERCETIN**

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Quercetin (3, 3', 4', 5', 7-pentahydroxyflavone) is the compound of a flavonol, one of six subclasses of flavonoids and antioxidants known as high so that it can be used as a potent preventive barrier on breast cancer cells, colon, lung, and ovarian cancer cell growth. Quercetin is classified in the Biopharmaceutical Classification System (BCS) class II which means it has high permeability quercetin but solubility is low thereby affecting bioavailability in the body. Cocrystal can be used as a method to increase solubility and dissolution rate of various poorly water soluble drug.

This research aims to determine the influence of the formation of cocrystal by the method of solvent-drop grinding (SDG) for solubility and dissolution rate of quercetin. SDG is the development of grinding method by adding a little solvent in the process to improve the reaction of active ingredients and coformer. Cocrystal quercetin-malonic acid comparison will be made in 1:1 and 1:2 ratio.

Solubility test results showing the solubility of quercetin increases with formation of cocrystal. The largest increase occurred in cocrystal quercetin-malonic acid ratio 1:2 with 1.5 times larger than the solubility of quercetin. Dissolution rate test results also showing dissolution cocrystal quercetin-malonic acid in ratio 1:2 have the largest efficiency better dissolution takes with 1.056 times quercetin,

The results of the statistical analysis by the method of one way ANOVA followed by LSD test shows that the solubility and the rate has means better dissolution takes on the system are made. The conclusions of the research that has been done is the formation of cocrystal quercetin-malonic acid can have affect the solubility and dissolution rate of quercetin.

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