ABSTRACT

Characterization Physicochemical of Quercetin – Succinic Acid Cocrystal with Solvent Evaporation Method

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Quercetin is one of derivate compound from flavonoid classification with structure polyhydroxyaromatic. According to biochemistry quercetin was effective to against stress oxidative and potential as antioxidant but this compound has poor solubility in aqueous media. The purposed of this study was to investigate the physicochemical properties of quercetin-succinic acid co-crystal. The quercetin-succinic acid co-crystal were prepared in molar ratio (1:1), (1:2), and (1:3) by solvent evaporation. X-ray diffraction, differential thermal analysis (DTA), infrared spectroscopy (FTIR), Scanning Electron Microscope (SEM) were carried out to determine quercetin-succinic acid co-crystal properties.

Based on diffractogram, termogram, spectrum infrared, and microscopy SEM of physicochemical quercetin-succinic acid co crystal were showed that physicochemical had changed from quercetin. The diffractogram which explained of crystal lattice were showed few new peaks on co crystal diffractogram. The thermal analysis report of DTA showed characteristic peaks at 325,4°C(quercetin), 189,9°C (succinic acid), 270°C (cocrystal molar ratio 1:1), 275,8°C (cocrystal molar ratio 1:2), and 281,5°C (cocrystal molar ratio 1:3). All of the DTA termogram cocrystal showed sharp melting peak and lower than quercetin. The FTIR spectra of cocrystal had some peaks shifted from pure compound and shows bond formation between molecules. SEM analysis performed co crystal surface different from pure drug. From the test result, quercetin-succinic acid co-crystal which prepared by solvent evaporation method had successed.

Keyword: *Characeterization, Cocrystal, Quercetin, Succinic Acid*