

Preparation and evaluation of phytosomes of quercetin by solvent evaporation method

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Summary: *The objective of this study was to prepare and evaluate some physiochemical properties of phytosomes containing quercetin. Phytosomes using hydrogenated soy phosphatidylcholine (HSPC) as phospholipid were prepared by solvent evaporation method. Effect of hydration temperature and ratio of drug to HSPC on phytosome particle size, size distribution, encapsulation efficiency and drug solubility enhancement was investigated. When the ratio of quercetin: HSPC was 1:1 and the hydration temperature was 60°C, phytosomes had the smallest particle size (357.1 nm) and the highest encapsulation efficiency (41.01%). The optimal phytosomes exhibited the improvement of drug solubility about 12.4 times compared to the solubility of raw material. The interaction of quercetin and HSPC was proved by the movement of specific peaks in the infrared spectroscopy and nuclear magnetic resonance spectroscopy. Besides, the results obtained from powder X-ray diffraction and differential scanning calorimetry indicated that quercetin existed in amorphous state in phytosome.*