Mechanism Analysis of Ultrasonic Fractional Precipitation of (+)-Dihydromyricetin

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Abstract
The purification efficiency of (+)-dihydromyricetin, a bioactive plant flavonoid, was remarkably improved through ultrasound-based fractional precipitation. Precipitation efficiency has been dramatically improved, and the time required for precipitation has been reduced compared to conventional methods. As a result of investigating the mechanism of fractional precipitation in which ultrasonic cavitation and gas bubbles were introduced, it was found that the bubble itself contributes to the improvement of precipitation efficiency. In addition, the ultrasonic fractional precipitation behavior was quantitatively investigated by calculating the precipitate size and diffusion coefficient of (+)-dihydromyricetin.
Key words: (+)-Dihydromyricetin; Fractional precipitation; Cavitation bubble; Gas bubble; Mechanism