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Development various kinds of tomato extracts encapsulation

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The aims of the current study are encapsulation strategy for tomato extracts high pressure homogenizer and sonication was used to prepare tomato extracts nanoemulsion. Physicochemical properties of fabricated emulsion were characteristic. Firstly, the tomato extracts was dissolved in ethyl acetate as the ratio 0.3% w/w at 500rpm in 3 hours; the solution then was filtered through 90mm paper membrane. 0.01% BHT was added as an antioxidant to prevent degradation of lycopene extract. This organic solution was then poured slowly into the aqueous solution containing 0.5% (w/w) Tween 20 in distilled water under moderate magnetic stirring. The mixture was homogenized using a convenient homogenizer at 5000rpm for 5 min, and subsequently passed through the ultrasonic sonicator or subsequently passed through a high pressure homogenizer (60 to 140 MPa) and then ethyl acetate was removed by rotary evaporation at 300C. As a result, tomato extracts nanoemulsion using ultrasonic sonicator was formed with an average size ranging from 120 to 175 nm. But in high pressure homogenization the droplet average size was 100nm. The zeta potential value of the two types tomato extracts nanoemulsion was in the range -30 to -45 mV indicating that it is stable. This tomato extracts nanoemulsion fabrication procedure can be utilized for encapsulating various hydrophobic bio actives for food and beverage applications.

Biography

Saecheon Kim is pursuing on master's degree course in Food Nanotechnology laboratory at Sejong University. He has completed his bachelor's degree from Sejong University, Korea. He has researched development various kinds of tomato extracts encapsulation.

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