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Mechanisms of Ginger Bioactive Compounds Extract Using Soxhlet and Accelerated Water Extraction

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Abstract : The mechanism for extraction bioactive compounds from plant matrix is essential for optimizing the extraction process. As a benchmark technique, a soxhlet extraction has been utilized for discussing the mechanism and compared with an accelerated water extraction. The trends of both techniques show that the process involves extraction and degradation. The highest yields of 6-, 8-, 10-gingerols and 6-shogaol in soxhlet extraction were 13.948, 7.12, 10.312 and 2.306 mg/g, respectively. The optimum 6-, 8-, 10-gingerols and 6-shogaol extracted by the accelerated water extraction at 140oC were 68.97±3.95 mg/g at 3min, 18.98±3.04 mg/g at 5min, 5.167±2.35 mg/g at 3min and 14.57±6.27 mg/g at 3min, respectively. The effect of temperature at 3mins shows that the concentration of 6-shogaol increased rapidly as decreasing the recovery of 6-gingerol.

Keywords : mechanism, ginger bioactive compounds, soxhlet extraction, accelerated water extraction
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