

Title	Carotenoid Extraction from Yellow Pulp of Gac Fruit (<i>Momordica cochinchinensis</i> (Lour.) Spreng): Optimum Extraction Condition by Enzymatic Treatment and Antioxidant Capacities of Extract
Researcher	Assistant Professor Warakorn Kerdsup
Co- Researcher	Assistant Professor Phisut Naknean Assistant Professor Paramaporn Kerdsup
Academic Year	2021

Abstract

The aims of the current research were to optimize conditions of Rapidase Ex Color-assisted carotenoid extraction from yellow pulp of Gac fruit and to evaluate the antioxidant capacities of its extract. First, the proper Rapidase Ex Color concentrations (0.25-3.0%) were investigated. It was found that the highest lutein, lycopene and β -carotene contents was observed for the sample treated with 1% of enzyme. Thus, 1% of enzyme was selected for further study relating to the effect of pretreatment time on the carotenoid contents. The result showed that the pretreatment time with enzymatic treatment for 3 h gave the highest lutein (40 mg/g), lycopene (33 mg/g) and β -carotene (48 mg/g) contents. Furthermore, the extract, prepared by applying 1% of enzyme and 3 h of pretreatment time, was accessed its antioxidant capacities by DPPH-RSA, FRAP and reducing power methods. The data revealed that the antioxidant capacities of the enzyme-treated sample was higher approximately 2 times for DPPH-RSA and reducing power methods and 1.5 times for FRAP methods when compared to that of the enzyme without enzymatic treatment. Therefore, the utilization of Rapidase Ex Color could assist for increasing yield of carotenoid extraction as well as antioxidant capacities.

Keywords: Gac fruit, Rapidase Ex Color, carotenoid, yellow pulp