

Title Anti-glycated activity of polysaccharides of longan (*Dimocarpus longan* Lour.) fruit pericarp treated by ultrasonic wave

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Abstract

Ultrasonic wave was used to extract the polysaccharides of longan fruit pericarp (PLFP) in this work. The anti-glycated activity of PLFP was evaluated. Through artificial neural network toolbox of MATLAB software, a mathematical model between ultrasonic conditions and anti-glycated activity was constructed. The R^2 and MSE (mean square error) values of the model were calculated to be 0.98 and 0.13, respectively, which suggested a good fitness of the neural network. Response surface plots showed that ultrasonic power, time and temperature had complicated and significant effects on the anti-glycated activity of PLFP. The optimal ultrasonic conditions for obtaining the highest anti-glycated activity were predicted to be 276 W, 24 min and 69 °C. The predicted anti-glycated activity was 60.4%. The experimental determinations under these conditions were not significantly different ($P > 0.05$) to the predicted value. It indicated the good prediction and optimisation capability of the artificial neural network.