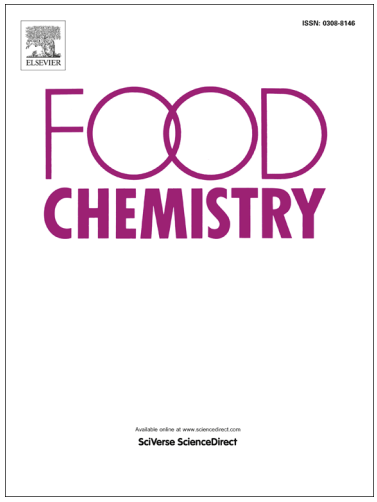

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Optimization of microwave assisted extraction of *Morus nigra* L. fruits maximizing tyrosinase inhibitory activity with isolation of bioactive constituents

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Abstract

Morus nigra L. is a beneficial food due to rich phenolic components. While aiming higher yields for bioactive constituents, reduction in terms of raw material, solvent, time and energy gained more importance to provide a sustainable life for human and nature. Microwave assisted extraction (MAE) of *Morus nigra* fruits was optimized in order to elicit process parameters maximizing bioactive metabolites and tyrosinase inhibitory activity. Spectrophotometry and UPLC-DAD-ESI-MS/MS systems were utilized for quantitative analysis of total phenol, flavonoid and anthocyanin contents. Optimum conditions for MAE were determined as 500 W, 35 % ethanol, 10 min yielding 12.63 mg/g cya-3-glu equiv. anthocyanin and IC_{50} value of 1.60 mg/ml for tyrosinase inhibitory activity. Microwave extracts prevailed better outcomes compared to conventional extraction methods (10.93 mg/g content with IC_{50} of 2.81 mg/ml). MAE could be considered as an advanced technique to obtain extracts from *Morus nigra* fruits with higher bioactive content and activity.