

## Accepted Manuscript

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

Halil Koyu, Aslihan Kazan, Serdar Demir, Mehmet Zeki Haznedaroglu, Ozlem Yesil-Celiktas

PII: S0308-8146(17)32014-9

DOI: <https://doi.org/10.1016/j.foodchem.2017.12.049>

Reference: FOCH 22146

To appear in: *Food Chemistry*

Received Date: 28 September 2017

Revised Date: 28 November 2017

Accepted Date: 13 December 2017



Please cite this article as: Koyu, H., Kazan, A., Demir, S., Haznedaroglu, M.Z., Yesil-Celiktas, O., Optimization of microwave assisted extraction of *Morus nigra* L. fruits maximizing tyrosinase inhibitory activity with isolation of bioactive constituents, *Food Chemistry* (2017), doi: <https://doi.org/10.1016/j.foodchem.2017.12.049>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

Halil Koyu<sup>1,\*</sup>, Aslihan Kazan<sup>2</sup>, Serdar Demir<sup>3</sup>, Mehmet Zeki Haznedaroglu<sup>1</sup>,

Ozlem Yesil-Celiktas<sup>2</sup>

<sup>1</sup>*Department of Pharmaceutical Botany, Faculty of Pharmacy, Izmir Katip Celebi University,  
35620, Cigli-Izmir, Turkey*

<sup>2</sup>*Novel Fluidic Technologies Group, Department of Bioengineering, Faculty of Engineering,  
Ege University, 35100, Bornova-Izmir, Turkey*

<sup>3</sup>*Department of Pharmaceutical Botany, Faculty of Pharmacy, Ege University, 35100,  
Bornova-Izmir, Turkey*

**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<sub>50</sub> 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<sub>50</sub> 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.

Download English Version:

<https://daneshyari.com/en/article/7585997>

Download Persian Version:

<https://daneshyari.com/article/7585997>

[Daneshyari.com](https://daneshyari.com)