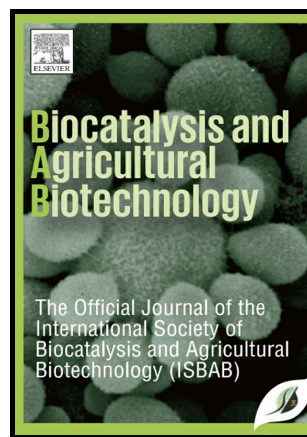


Author's Accepted Manuscript

Evaluation of antioxidant properties of some naturally isolated microalgae: Identification and characterization of the most efficient strain

Mohammad Hossein Morowvat, Younes Ghasemi



www.elsevier.com/locate/bab

PII: S1878-8181(16)30215-8
DOI: <http://dx.doi.org/10.1016/j.bcab.2016.09.010>
Reference: BCAB449

To appear in: *Biocatalysis and Agricultural Biotechnology*

Received date: 15 July 2016
Revised date: 26 August 2016
Accepted date: 21 September 2016

Cite this article as: Mohammad Hossein Morowvat and Younes Ghasemi Evaluation of antioxidant properties of some naturally isolated microalgae Identification and characterization of the most efficient strain, *Biocatalysis and Agricultural Biotechnology*, <http://dx.doi.org/10.1016/j.bcab.2016.09.010>

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 a review of the resulting galley proof before it is published in its final citable 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

Evaluation of antioxidant properties of some naturally isolated microalgae: Identification and characterization of the most efficient strain

Mohammad Hossein Morowvat ^{a*}, Younes Ghasemi ^{a,b}

^aPharmaceutical Sciences Research Center, School of Pharmacy, Shiraz University of Medical Sciences, P.O. Box 71345-1583, Shiraz, Iran

^bDepartment of Pharmaceutical Biotechnology, School of Pharmacy, Shiraz University of Medical Sciences, P.O. Box 71468-64685, Shiraz, Iran

*Corresponding author. Tel. /fax: +98 71 324 267 29. mhmorowvat@sums.ac.ir (M.H. Morowvat).

ABSTRACT

Antioxidant capacity and polyphenol content of both intra- and extracellular constituents were investigated in five naturally isolated microalgal strains using DPPH and Folin-Ciocalteu assays respectively. Three distinct solvents with different polarities including water, ethyl acetate and hexane were employed for extracting the bioactive compounds. Obtained data from DPPH assay suggest that the studied microalgal cells show significant levels of antioxidants and polyphenol compounds ranging from 14.68 ± 1.36 (*Oocystis pusilla*) to 68.68 ± 5.95 (*Scenedesmus rubescens*) $\mu\text{mol Trolox g}^{-1}$ and 9.62 ± 1.37 (*O. pusilla*) to 48.57 ± 3.99 (*S. rubescens*) mg gallic acid equivalent (GAE) g^{-1} respectively. Considerable connection ($R^2=0.9316$) between two investigated factors prove that a great part of antioxidant activity in the studied microalgae are due to its phenolic compounds. Besides, the results of growth kinetic studies and composition analysis in the most efficient strain (*S. rubescens*) showed a great potential for antioxidant and polyphenolic compounds production in large scales.

Keywords: Antioxidant; Composition analysis; Growth kinetic; Microalgae; Naturally isolated; Polyphenol content

1. Introduction

Antioxidant is a biological macromolecule which protects organisms or their biological compounds against oxidative radicals (Lin et al., 2014). Nowadays,

Download English Version:

<https://daneshyari.com/en/article/8406283>

Download Persian Version:

<https://daneshyari.com/article/8406283>

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