

# Advances in Bioscience and Biotechnology



ISSN: 2156-8456



<https://www.scirp.org/journal/abb>

# Journal Editorial Board

ISSN: 2156-8456 (Print) ISSN: 2156-8502 (Online)

<https://www.scirp.org/journal/abb>

---

## Editor-in-Chief

**Prof. Abass Alavi**

University of Pennsylvania, USA

## Executive Editor-in-Chief

**Prof. Roberto Fernández-Lafuente**

Consejo Superior de Investigaciones Científicas, Spain

## Editorial Board

**Prof. Suleyman I. Allakhverdiev**

Russian Academy of Sciences, Russia

**Prof. Atsushi Asakura**

University of Minnesota, USA

**Dr. Sanchita Bandyopadhyay-Ghosh**

University of Toronto, Canada

**Prof. Susanta K. Behura**

University of Notre Dame, USA

**Prof. Mohamed Ben Amar**

University of Montreal, Canada

**Prof. Benoît Chénais**

Université du Maine, France

**Prof. Mohamed Chahine**

Laval University, Canada

**Dr. Sulbha Choudhari**

Frederick National Laboratory for Cancer Research, USA

**Dr. Priya Choudhry**

California Institute of Technology, USA

**Dr. Fatih Deniz**

Harran University, Sanliurfa, Turkey

**Prof. Alessandro S. Galdino**

Universidade Federal de São João Del-Rei (UFSJ), Brazil

**Prof. Mahdi Garelnabi**

University of Massachusetts, USA

**Dr. Mazeyar Parvinzadeh Gashti**

Département de Chimie, Université Laval, Canada

**Prof. Mehrnaz Gharaee-Kermani**

University of Michigan, USA

**Prof. Jane L. Hoover-Plow**

Cleveland Clinic Lerner Research Institute, USA

**Dr. Basalingappa L. Hungund**

Columbia University, USA

**Prof. Avinash P. Ingle**

SGB Amravati University, India

**Prof. Noah Isakov**

Ben Gurion University of the Negev, Israel

**Dr. Sabzali A. Javadov**

University of Puerto Rico, USA

**Dr. Shuli Kang**

University of Southern California, USA

**Prof. Lukasz Kedzierski**

Monash University, Australia

**Prof. Wan Lee**

Dongguk University, South Korea

**Dr. Lingyu Li**

Stanford University, USA

**Dr. Jiyan Ma**

Ohio State University, USA

**Prof. Manuela Martins-Green**

University of California, USA

**Prof. James Michael Mathis**

Louisiana State University Health Sciences Center, USA

**Prof. Subhash C. Mojumdar**

University of New Brunswick, Canada

**Prof. Pablo Iván Nikel**

University of San Martín, Argentina

**Prof. Akbar Nikkhah**

University of Zanjan, Iran

**Prof. David Pimentel**

Cornell University, USA

**Prof. Kun Qu**

Stanford University, USA

**Prof. Khaled Nabih Zaki Rashed**

National Research Centre (NRC), Egypt

**Prof. Alireza G. Senejani**

Yale University, USA

**Dr. Manjunatha Shivaraju**

Centre for Regenerative Medicine, Harvard Stem Cell  
Institute, Harvard Medical School, USA

**Prof. Ajay Singh**

Lystek International Inc., Canada

**Prof. Zheng Su**

Genentech Inc., USA

**Prof. Jinrong Wan**

University of Missouri, USA

**Prof. Jinfu Wang**

Zhejiang University, China

**Prof. Zhixiang Wang**

University of Alberta, Canada

**Dr. Yonggan Wu**

Stanford University, USA

**Prof. Wanxi Yang**

Zhejiang University, China

# Table of Contents

**Volume 11    Number 12**

**December 2020**

**Identity and Safety of a Novel *Aurantiochytrium sp.* for Terrestrial Heterotrophic  
Docosahexaenoic Acid Production**

A. N. W. Bell, C. A. Moran.....489

# Advances in Bioscience and Biotechnology (ABB)

## Journal Information

### SUBSCRIPTIONS

The *Advances in Bioscience and Biotechnology* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$89 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### SERVICES

#### Advertisements

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### COPYRIGHT

#### Copyright and reuse rights for the front matter of the journal:

Copyright © 2020 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### Copyright for individual papers of the journal:

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

#### Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [abb@scirp.org](mailto:abb@scirp.org)





## Call for Papers

# Advances in Bioscience and Biotechnology

ISSN: 2156-8456 (Print) ISSN: 2156-8502 (Online)

<https://www.scirp.org/journal/abb>

**Advances in Bioscience and Biotechnology (ABB)** is an international journal dedicated to the latest advancement of biosciences. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of biosciences. All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy.

## Editor-in-Chief

**Prof. Abass Alavi**

University of Pennsylvania, USA

## Executive Editor-in-Chief

**Prof. Roberto Fernández-Lafuente**

Consejo Superior de Investigaciones Científicas, Spain

## Editorial Board

Prof. Suleyman I. Allakhverdiev  
Prof. Atsushi Asakura  
Dr. Sanchita Bandyopadhyay-Ghosh  
Prof. Susanta K. Behura  
Prof. Mohamed Ben Amar  
Prof. Benoît Chénais  
Prof. Mohamed Chahine  
Dr. Sulbha Choudhari  
Dr. Priya Choudhry  
Dr. Fatih Deniz

Prof. Alessandro S. Galdino  
Prof. Mahdi Garelnabi  
Dr. Mazeyar Parvinzadeh Gashti  
Prof. Mehrnaz Gharaee-Kermani  
Prof. Jane L. Hoover-Plow  
Dr. Basalingappa L. Hungund  
Prof. Avinash P. Ingle  
Prof. Noah Isakov  
Dr. Sabzali A. Javadov  
Dr. Shuli Kang  
Prof. Lukasz Kedzierski

Prof. Wan Lee  
Dr. Lingyu Li  
Dr. Jiyan Ma  
Prof. Manuela Martins-Green  
Prof. James Michael Mathis  
Prof. Subhash C. Mojumdar  
Prof. Pablo Iván Nikel  
Prof. Akbar Nikkhah  
Prof. David Pimentel  
Prof. Kun Qu  
Prof. Khaled Nabih Zaki Rashed

Prof. Alireza G. Senejani  
Dr. Manjunatha Shivaraju  
Prof. Ajay Singh  
Prof. Zheng Su  
Prof. Jinrong Wan  
Prof. Jinfu Wang  
Prof. Zhixiang Wang  
Dr. Yonggan Wu  
Prof. Wanxi Yang

## Subject Coverage

This journal invites original research and review papers that address the following issues in bioscience and biotechnology. Topics of interest include, but are not limited to:

- Aerobiology
- Anthropology
- Biochemical Genetics
- Biochemistry
- Bioinformatics
- Biological Engineering
- Biological Evolution
- Biomathematics
- Biophysics
- Biostatistics
- Botany
- Cytobiology
- Developmental Biology
- Ecology
- Entomology
- Enzyme Engineering
- Genetic Engineering
- Genetics
- Immunology
- Microbiology
- Molecular Biology
- Nano-Bio-Analysis
- Neurobiology
- Pathology
- Physiology
- Protein Engineering
- Radiation Biology
- Virology
- Zoology

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the **ABB**.

## Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. Authors are responsible for having their papers checked for style and grammar prior to submission to ABB. For more details about the submissions, please access the website.

## Website and E-Mail

<https://www.scirp.org/journal/abb>

E-mail: [abb@scirp.org](mailto:abb@scirp.org)