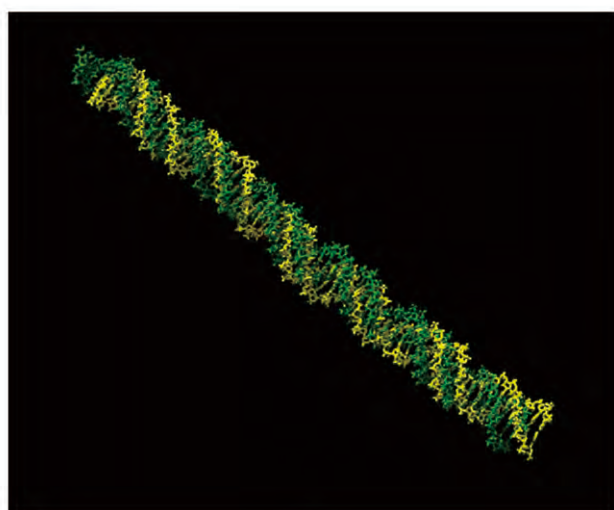
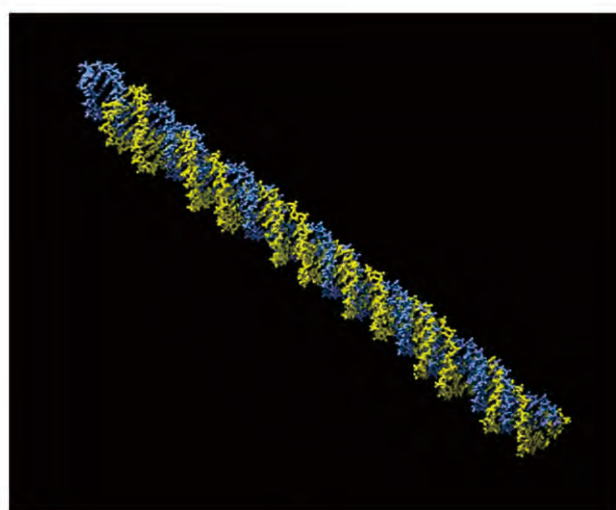


# Advances in Bioscience and Biotechnology

Special Issue on *E. coli* Theories and Perspective



(a)



(b)

ISSN: 2156-8456



9 772156 845604 03 A

[www.scirp.org/journal/abb](http://www.scirp.org/journal/abb)

# Journal Editorial Board

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

<http://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

**Dr. Suleyman I. Allakhverdiev**

Russian Academy of Sciences, Russia

**Dr. Atsushi Asakura**

University of Minnesota, USA

**Dr. Sanchita Bandyopadhyay-Ghosh**

University of Toronto, Canada

**Dr. Susanta K. Behura**

University of Notre Dame, USA

**Prof. Mohamed Chahine**

Laval University, Canada

**Prof. Benoît Chénais**

Université du Maine, France

**Dr. Hodaka Fujii**

Osaka University, Japan

**Dr. Mahdi Garelnabi**

University of Massachusetts, USA

**Dr. Mehrnaz Gharaee-Kermani**

University of Michigan, USA

**Dr. Jane L. Hoover-Plow**

Cleveland Clinic Lerner Research Institute, USA

**Dr. Basalingappa L. Hungund**

Columbia University, USA

**Dr. Avinash 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. Lukasz Kedzierski**

Walter and Eliza Hall Institute of Medical Research, Australia

**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

**Dr. Pablo Iván Nikel**

University of San Martín, Argentina

**Prof. Akbar Nikkhah**

University of Zanjan, Iran

**Dr. David Pimentel**

Cornell University, USA

**Dr. Kun Qu**

Stanford University, USA

**Dr. Alireza G. Senejani**

Yale University, USA

**Dr. Ajay Singh**

Lystek International Inc., Canada

**Dr. Zheng Su**

Genentech Inc., USA

**Dr. Jinrong Wan**

University of Missouri, USA

**Prof. Jinfu Wang**

Zhejiang University, China

**Prof. Zhixiang Wang**

University of Alberta, Canada

## Managing Executive Editor

**Dr. Tingfeng Li**

Tulane University, USA

# TABLE OF CONTENTS

Volume 4, Number 3A, March 2013

<b>Attachment of <i>Escherichia coli</i> to fine sediment particles within construction sediment basins</b>	
E. A. Kunkel, C. V. Privette, C. B. Sawyer, J. C. Hayes.....	407
<b>Transposable elements in <i>Escherichia coli</i> antimicrobial resistance</b>	
A. Iyer, E. Barbour, E. Azhar, A. A. El Salabi, H. M. A. Hassan, I. Qadri, A. Chaudhary, A. Abuzenadah, T. Kumosani, G. Damanhour, M. Alawi, T. Na'was, A. M. A. Nour, S. Harakeh.....	415
<b>Use of <i>Escherichia coli</i> toxins in sepsis models</b>	
I. Burkovskiy, J. Zhou, C. Lehmann.....	424
<b>An exploratory study of food safety and food handling: Examining ready-to-eat foods in independent delicatessen operations</b>	
D. Murray, C. Feldman, L. Lee, C. Schuckers.....	430
<b>PCR-DGGE analysis of earthworm gut bacteria diversity in stress of <i>Escherichia coli</i> O157:H7</b>	
Y. Zhang, G. C. Wang, Y. P. Wu, H. Zhao, Y. F. Zhang, Z. J. Sun.....	437
<b>Into the life and death: RecA a WISE factor working to integrate survival and evolution in <i>Escherichia coli</i></b>	
J. M. G. Gómez.....	442
<b><i>Escherichia coli</i> in seafood: A brief overview</b>	
R. A. Costa.....	450
<b>Metabolicregulation of <i>Escherichia coli</i> cultivated under anaerobic and aerobic conditions in response to the specific pathway gene knockouts</b>	
Y. Matsuoka, K. Shimizu.....	455
<b>Bacteriophages in <i>Escherichia coli</i> antimicrobial resistance</b>	
A. Iyer, E. Barbour, E. Azhar, I. Qadri, A. Chaudhary, A. Abuzenadah, T. Kumosani, G. Damanhour, S. Bahijri, A. Al-Hejin, A. M. A. Nour, S. Harakeh.....	469
<b>Effect of <i>cra</i> gene mutation on the metabolism of <i>Escherichia coli</i> for a mixture of multiple carbon sources</b>	
R. L. Yao, H. Kurata, K. Shimizu.....	477
<b>Vaccination against urinary tract infections caused by <i>E. coli</i></b>	
H. W. Bauer, H. Shams, R. M. Bauer.....	487
<b>Terahertz vibrational spectroscopy of <i>E. coli</i> and molecular constituents: Computational modeling and experiment</b>	
T. Globus, I. Sizov, B. Gelmont.....	493

The figure on the front cover is from the article published in Advances in Bioscience and Biotechnology, 2013, Vol. 4, No. 3A, pp. 493-503 by Tatiana Globus, *et al.*

# **Advances in Bioscience and Biotechnology (ABB)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Advances in Bioscience and Biotechnology* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$79 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©2013 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

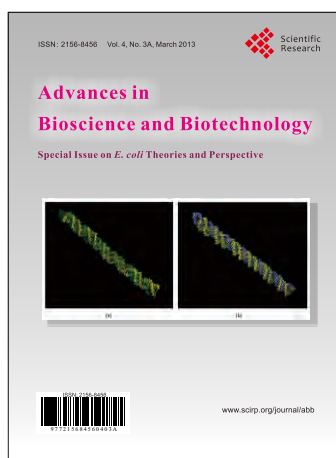
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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)

<http://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

Dr. Suleyman I. Allakhverdiev  
Dr. Atsushi Asakura  
Dr. Sanchita Bandyopadhyay-Ghosh  
Dr. Susanta K. Behura  
Prof. Mohamed Chahine  
Prof. Benoît Chénais  
Dr. Hodaka Fujii  
Dr. Mahdi Garelnabi

Dr. Mehrnaz Gharaee-Kermani  
Dr. Jane L. Hoover-Plow  
Dr. Basalingappa L. Hungund  
Dr. Avinash Ingle  
Prof. Noah Isakov  
Dr. Sabzali A. Javadov  
Dr. Lukasz Kedzierski  
Dr. Jiyan Ma

Prof. Manuela Martins-Green  
Prof. James Michael Mathis  
Prof. Subhash C. Mojumdar  
Dr. Pablo Iván Nikel  
Prof. Akbar Nikkhah  
Dr. David Pimentel  
Dr. Kun Qu  
Dr. Alireza G. Senejani

Dr. Ajay Singh  
Dr. Zheng Su  
Dr. Jinrong Wan  
Prof. Jinfu Wang  
Prof. Zhixiang Wang

## 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

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

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



## What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science, by delivering superior scientific publications and scientific information solution provider that enable advancement in scientific research.

## What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, world-wide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Website: <http://www.scirp.org>**  
**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**  
**Advertisement: [service@scirp.org](mailto:service@scirp.org)**