# **Journal of Microorganism Control**

The Journal of Microorganism Control (Formerly Biocontrol Science) is published quarterly (March, June, September and December) by the Society for Antibacterial and Antifungal Agents, Japan.

# **Editor-in-Chief**

Satoshi FUKUZAKI, Graduate School of Bioresouces, Mie University, 1577, Kurimamachiya-cho, Tsu, Mie 514-8507, Japan E-mail: biocontrol-sci (a) saaai.jp

#### **Editor-in-Vice Chief**

Akihiro SHIRAI, Tokushima University Hiroshi MORITA, University of Kitakyushu Jun SAWAI, Kanagawa Institute of Technology

## **Editorial Board**

Hiromu TAKAMATSU, Setsunan University
Noriko SHIMASAKI, National Institute of Infectious Diseases
Tomonori SUZUKI, Tokyo University of Science
U Yanagi, Kogakuin University
Hidemi IZUMI, Kindai University
Hiroto MAEDA, Kagoshima University
Takuya MAEDA, Hyogo Medical University

# **International Regional Editors**

M. Jahangir ALAM, University of Houston College of Pharmacy, USA
Maria Isabel GIL, Centro de Edafologia Aplicada del Segura, Spain
Tamrin Bin Mohamad LAL, Universiti Malaysia Sabah, Malaysia
Ivan LEGUÉRINEL, Université de Bretagne-Occidentale, France
Yaguang LUO, US Department of Agriculture-Agricultural Research Service, America
Asish K. MUKHOPADHYAY, ICMR-National Institute of Cholera and Enteric Diseases, India
Carlos RIQUELME, Centro Bioinnovacion de Antofagasta, Universidad de Antofagasta, Chile
Victor RODOV, Agricultural Research Organization, Volcani Institute, Israel
Varit SRILAONG, King Mongkut's University of Technology Thonburi, Thailand
Yohan YOON, Korea Aerospace University, Korea

### **Advisory Editors**

Renata LEUSCHNER, European Food Safety Authority, Italy Yoshikazu SAKAGAMI, Former Professor, Kidai University Tetsuaki TSUCHIDO, Osaka Metropolitan University Kazuhito WATABE, Professor Emeritus, Setsunan University

# **Editorial Official**

Shinji TAKAGI, The Society for Antibacterial and Antifungal Agents, Japan, Nishi-honmachi 1-13-38, Shin-kosan Bldg., Nishi-ku, Osaka 550-0005, Japan. Tel. (+81) 6-6538-2166, Fax (+81) 6-6538-2169, e-mail: boukin(a) nifty.com

The Society for Antibacterial and Antifungal Agents, Japan [Founded 1973]

President Shin-ichi MIYOSHI

Vice-presidents Ritsuko KIKUNO and Junji OKUNISHI

Chairman Yuko KUMEDA Secretary General Shinji TAKAGI

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 or otherwise without the prior written permission of the Society for Antibacterial and Antifungal Agents, Japan.