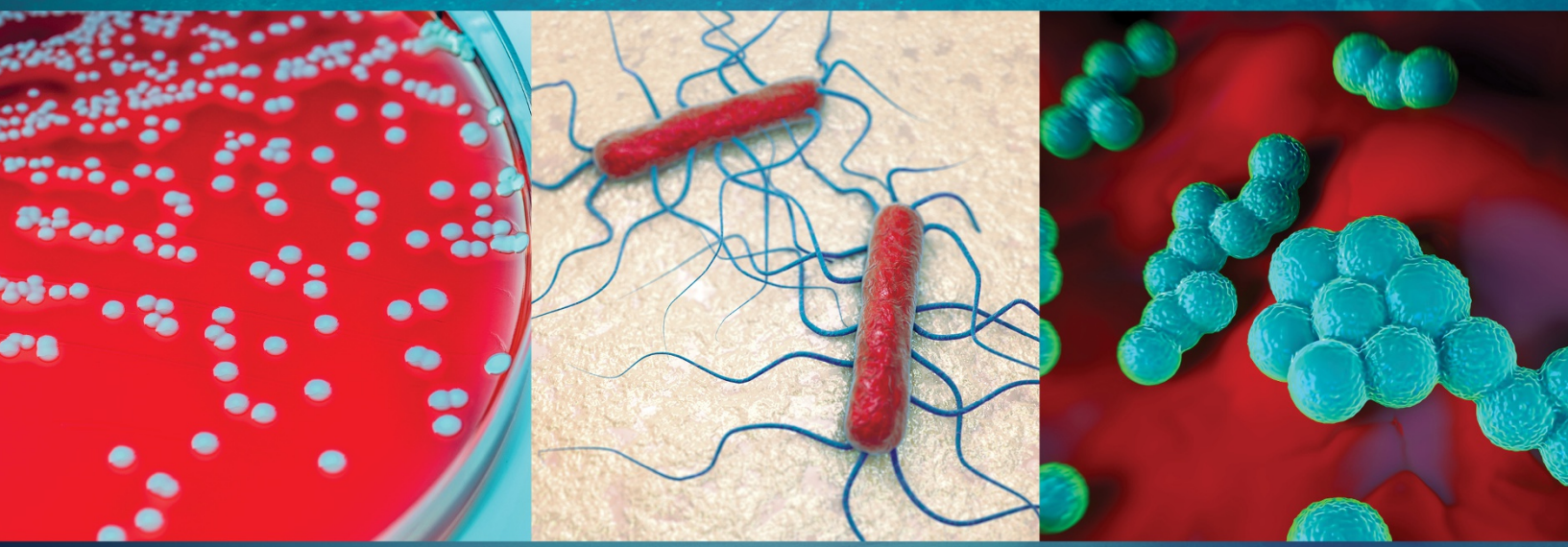
Antimicrobial Resistance

in Bacteria from Livestock and Companion Animals



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Stefan Schwarz, Lina Maria Cavaco, and Jianzhong Shen
with Frank Møller Aarestrup

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Library of Congress Cataloging-in-Publication Data

Names: Schwarz, Stefan (Professor of veterinary medicine), editor. | Cavaco, Lina Maria, editor. | Shen, Jianzhong (Professor of agricultural science), editor. | Aarestrup, Frank M., 1966- editor.
Title: Antimicrobial resistance in bacteria from livestock and companion animals / editors: Stefan Schwarz, Lina Maria Cavaco, and Jianzhong Shen, with Frank M?ller Aarestrup.
Description: Washington, DC : ASM Press, [2018] | Includes index.
Identifiers: LCCN 2018025722 (print) | LCCN 2018027927 (ebook) | ISBN 9781555819804 (ebook) | ISBN 9781555819798 | ISBN 9781555819798q (hard cover)
Subjects: LCSH: Drug resistance in microorganisms. | Antibiotics in veterinary medicine.
Classification: LCC QR177 (ebook) | LCC QR177 .A58565 2018 (print) | DDC 616.9/041--dc23
LC record available at https://lccn.loc.gov/2018025722

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Printed in Canada

10 9 8 7 6 5 4 3 2 1

Address editorial correspondence to
ASM Press, 1752 N St., N.W.,
Washington, DC 20036-2904, USA

Send orders to ASM Press, P.O. Box 605, Herndon, VA 20172, USA
Phone: 800-546-2416; 703-661-1593
Fax: 703-661-1501
E-mail: books@asmusa.org
Online: http://www.asmscience.org

We would like to thank our families for their support and to all our corresponding and contributing authors who shared their expertise, time, and effort in producing this book.

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Foreword

I am honored to be asked to write a preface for the collection of articles that comprise *Antimicrobial Resistance in Bacteria from Livestock and Companion Animals*. The authors are all leaders in the field and have provided comprehensive summaries of their knowledge in all aspects of the use of antibiotics and development of resistance in animal health.

It is regrettable that it has taken 50 years to recognize that this worldwide plague of misuse and resistance development cannot be reversed. Given recent publications, the extent of antibiotic use in commercial fish farming in Southeast Asia reminds us that there are still many hurdles to be overcome if we want to control the misuse of antibiotics in humans.

Finding new antimicrobials has always been difficult, and it is to be hoped that modern molecular biology and its constant technical improvements will save the day and provide humans with reliable agents for disease treatment without the inevitability of drug resistance. Improving knowledge of the science of low-molecular-weight microbial compounds will perhaps, in time, teach us how to use antibiotics for human use. Antimicrobial discovery must continue apace such that a source of reliable agents will always be available, whether for human or animal health.

This compendium of interesting and focused articles is valuable, and it promises to provide expert advice on all aspects of antimicrobial resistance and ways of controlling it. Remember that in the 1950s antibiotics were miracles, but they have become menaces! It is up to us to focus on intelligent use of small molecules as cures and to finally eliminate infectious diseases in humans.

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Preface

Antimicrobial agents are indispensable for the treatment of bacterial infections not only in humans, but also in animals. In veterinary medicine, no new classes of antimicrobial agents are expected to be licensed in the coming years. In fact, virtually all antimicrobial agents that have been approved during the past 2 decades for veterinary applications are derivatives of already approved antimicrobial agents. Given this situation, it is most important to use the currently available antimicrobial agents as wisely as possible to preserve their efficacy for the future. To this end, it is important to better educate all those people who prescribe antimicrobial agents in human and veterinary medicine about antimicrobial resistance, resistant bacteria, management practices, and measures to prevent infections as well as prudent use of antimicrobial agents. On one hand, it is important to refresh continuously the knowledge on the aforementioned topics, and on the other hand, it is necessary to raise awareness on antimicrobial resistance of bacteria from livestock and companion animals so that measures to counteract resistance development will be implemented.

This book, *Antimicrobial Resistance of Bacteria from Livestock and Companion Animals*, is intended to become a valuable reference for persons who treat, research, or monitor resistance in bacteria of animal origin. The first book of this kind—*Antimicrobial Resistance in Bacteria of Animal Origin*, edited by Frank M. Aarestrup—was published in 2006 by ASM Press. More than a decade later, we felt that it was time to compile a new book for ASM Press that would include the wealth of data on antimicrobial resistance in bacteria from animals that has been published in the meantime.

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