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January 2012

Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically; Approved Standard—Ninth Edition

This document addresses reference methods for the determination of minimal inhibitory concentrations of aerobic bacteria by broth macrodilution, broth microdilution, and agar dilution.

A standard for global application developed through the Clinical and Laboratory Standards Institute consensus process.



M100-S22
Vol. 32 No. 3
Replaces M100-S21
Vol. 31 No. 1

January 2012

Performance Standards for Antimicrobial Susceptibility Testing; Twenty-Second Informational Supplement

This document provides updated tables for the Clinical and Laboratory Standards Institute antimicrobial susceptibility testing standards M02-A11 and M07-A9.

An informational supplement for global application developed through the Clinical and Laboratory Standards Institute consensus process.



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Advancing Quality in Health Care Testing

Clinical and Laboratory Standards Institute (CLSI) is an international, interdisciplinary, nonprofit, standards developing, and educational organization that promotes the development and use of voluntary consensus standards and guidelines within the health care community. We are recognized worldwide for the application of our unique consensus process in the development of standards and guidelines for patient testing and related health care issues. Our process is based on the principle that consensus is an effective way to improve patient testing and health care services.

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Clinical and Laboratory Standards Institute
950 West Valley Road, Suite 2500
Wayne, PA 19087 USA
610.688.0100
F: 610.688.0700
www.clsi.org
standard@clsi.org

Performance Standards for Antimicrobial Susceptibility Testing; Twenty-Second Informational Supplement

Abstract

The supplemental information presented in this document is intended for use with the antimicrobial susceptibility testing procedures published in the following Clinical and Laboratory Standards Institute (CLSI)-approved standards: M02-A11—*Performance Standards for Antimicrobial Disk Susceptibility Tests; Approved Standard—Eleventh Edition*; and M07-A9—*Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically; Approved Standard—Ninth Edition*. The standards contain information about both disk (M02) and dilution (M07) test procedures for aerobic bacteria.

Clinicians depend heavily on information from the clinical microbiology laboratory for treatment of their seriously ill patients. The clinical importance of antimicrobial susceptibility test results requires that these tests be performed under optimal conditions and that laboratories have the capability to provide results for the newest antimicrobial agents.

The tabular information presented here represents the most current information for drug selection, interpretation, and quality control using the procedures standardized in the most current editions of M02, M07, and M11. Users should replace the tables published earlier with these new tables. (Changes in the tables since the most current edition appear in boldface type.)

Clinical and Laboratory Standards Institute. *Performance Standards for Antimicrobial Susceptibility Testing; Twenty-Second Informational Supplement*. CLSI document M100-S22 (ISBN 1-56238-785-5 [Print]; ISBN 1-56238-786-3 [Electronic]). Clinical and Laboratory Standards Institute, 950 West Valley Road, Suite 2500, Wayne, Pennsylvania 19087 USA, 2012.

The data in the interpretive tables in this supplement are valid only if the methodologies in M02-A11—*Performance Standards for Antimicrobial Disk Susceptibility Tests; Approved Standard—Eleventh Edition*; and M07-A9—*Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically; Approved Standard—Ninth Edition* are followed.

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Franklin R. Cockerill, III, MD
Matthew A. Wikler, MD, MBA, FIDSA
Jeff Alder, PhD
Michael N. Dudley, PharmD, FIDSA
George M. Eliopoulos, MD
Mary Jane Ferraro, PhD, MPH
Dwight J. Hardy, PhD
David W. Hecht, MD
Janet A. Hindler, MCLS, MT(ASCP)
Jean B. Patel, PhD, D(ABMM)
Mair Powell, MD, FRCP, FRCPath
Jana M. Swenson, MMSc
Richard B. Thomson Jr., PhD
Maria M. Traczewski, BS, MT(ASCP)
John D. Turnidge, MD
Melvin P. Weinstein, MD
Barbara L. Zimmer, PhD



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Committee Membership

Consensus Committee on Microbiology

John H. Rex, MD, FACP

Chairholder

**AstraZeneca Pharmaceuticals
Waltham, Massachusetts, USA**

Mary Jane Ferraro, PhD, MPH

Vice-Chairholder

**Massachusetts General Hospital
Boston, Massachusetts, USA**

Nancy L. Anderson, MMSc,

MT(ASCP)

Centers for Disease Control and
Prevention

Atlanta, Georgia, USA

Barbara Ann Body, PhD, D(ABMM)

Laboratory Corporation of America
Burlington, North Carolina, USA

Betty (Betz) A. Forbes, PhD,

D(ABMM)

Medical College of Virginia Campus
Richmond, Virginia, USA

Thomas R. Fritsche, MD, PhD

Marshfield Clinic

Marshfield, Wisconsin, USA

Freddie Mae Poole, MS, MT

FDA Center for Devices and
Radiological Health

Silver Spring, Maryland, USA

Fred C. Tenover, PhD, D(ABMM)

Cepheid

Sunnyvale, California, USA

John D. Turnidge, MD

SA Pathology at Women's and

Children's Hospital

North Adelaide, Australia

Subcommittee on Antimicrobial Susceptibility Testing

Franklin R. Cockerill, III, MD

Chairholder

**Mayo College of Medicine
Rochester, Minnesota, USA**

Matthew A. Wikler, MD, MBA,

FIDSA

Vice-Chairholder

IASO Pharma, Inc.

San Diego, California, USA

Jeff Alder, PhD

Bayer Healthcare

Pinebrook, New Jersey, USA

Michael N. Dudley, PharmD, FIDSA

Rempex Pharmaceuticals, Inc.

San Diego, California, USA

George M. Eliopoulos, MD

Beth Israel Deaconess Medical Center

Boston, Massachusetts, USA

Dwight J. Hardy, PhD

University of Rochester Medical Center

Rochester, New York, USA

David W. Hecht, MD

Loyola University Medical Center

Maywood, Illinois, USA

Janet A. Hindler, MCLS, MT(ASCP)

UCLA Medical Center

Los Angeles, California, USA

Jean B. Patel, PhD, D(ABMM)

Centers for Disease Control and
Prevention

Atlanta, Georgia, USA

Mair Powell, MD, FRCP, FRCPath

MHRA

London, United Kingdom

Richard B. Thomson, Jr., PhD

Evanston Hospital, NorthShore

University HealthSystem

Evanston, Illinois, USA

John D. Turnidge, MD

SA Pathology at Women's and

Children's Hospital

North Adelaide, Australia

Melvin P. Weinstein, MD

Robert Wood Johnson Medical School

New Brunswick, New Jersey, USA

Barbara L. Zimmer, PhD

Siemens Healthcare Diagnostics Inc.

West Sacramento, California, USA

Acknowledgment

CLSI and the Consensus Committee on Microbiology gratefully acknowledge the following individuals for their help in preparing this document:

Mary Jane Ferraro, PhD, MPH

Massachusetts General Hospital

Boston, Massachusetts, USA

Jana M. Swenson, MMSc

Consultant

Atlanta, Georgia, USA

Maria M. Traczewski, BS,

MT(ASCP)

The Clinical Microbiology

Institute

Wilsonville, Oregon, USA

Text and Table Working Group

Jana M. Swenson, MMSc
Chairholder
Consultant
Atlanta, Georgia, USA

Maria M. Traczewski, BS, MT(ASCP)
Recording Secretary
The Clinical Microbiology Institute
Wilsonville, Oregon, USA

Janet A. Hindler, MCLS, MT(ASCP)
 UCLA Medical Center
 Los Angeles, California, USA

Judy Johnston, MS
 Siemens Healthcare Diagnostics Inc.
 West Sacramento, California, USA

David J. Farrell, PhD, D(ABMM)
 JMI Laboratories
 North Liberty, Iowa, USA

Dyan Luper, BS, MT(ASCP)SM
 BD Diagnostic Systems
 Sparks, Maryland, USA

Linda M. Mann, PhD, D(ABMM)
 Siemens Healthcare Diagnostics Inc.
 West Sacramento, California, USA

Frederic J. Marsik, PhD, ABMM
 FDA Center for Drug Evaluation and
 Research
 Silver Spring, Maryland, USA

Susan D. Munro, MT(ASCP)
 Campbell, California, USA

Flavia Rossi, MD
 University of Sao Paulo
 Sao Paulo, Brazil

Jeff Schapiro
 Kaiser Permanente
 Almo, California, USA

Dale A. Schwab, PhD, D(ABMM)
 Quest Diagnostics, Nichols Institute
 San Juan Capistrano, California, USA

Albert T. Sheldon, Jr., PhD
 Antibiotic & Antiseptic Consultants
 Cypress, Texas, USA

Richard B. Thomson, Jr., PhD
 Evanston Hospital, NorthShore
 University HealthSystem
 Evanston, Illinois, USA

Mary K. York, PhD, ABMM
 MKY Microbiology Consulting
 Walnut Creek, California, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson Medical
 School
 New Brunswick, New Jersey, USA

Quality Control Working Group

Steve Brown, PhD, ABMM
Co-Chairholder
The Clinical Microbiology Institute
Wilsonville, Oregon, USA

Sharon K. Cullen, BS, RAC
Co-Chairholder
Siemens Healthcare Diagnostics
West Sacramento, California, USA

William Brasso
 BD Diagnostic Systems
 Sparks, Maryland, USA

Stephen Hawser, PhD
 IHMA
 Schaumburg, Illinois, USA

Janet A. Hindler, MCLS, MT(ASCP)
 UCLA Medical Center
 Los Angeles, California, USA

Michael D. Huband
 Pfizer Global R&D
 Groton, Connecticut, USA

Ronald N. Jones, MD
 JMI Laboratories
 North Liberty, Iowa, USA

Ann Macone
 Paratek Pharmaceuticals, Inc.
 Boston, Massachusetts, USA

Ross Mulder, MT(ASCP)
 bioMérieux, Inc.
 Hazelwood, Missouri, USA

Susan D. Munro, MT(ASCP)
 Campbell, California, USA

Frank O. Wegerhoff, PhD
 Covance Central Laboratory Services
 Inc.
 Indianapolis, Indiana, USA

Jean Patel, PhD, D(ABMM)
 Centers for Disease Control and
 Prevention
 Atlanta, Georgia, USA

Robert P. Rennie, PhD
 University of Alberta Hospital
 Edmonton, Alberta, Canada

Staphylococcal and Streptococcal Working Group

Jean B. Patel, PhD, D(ABMM)
Chairholder
Centers for Disease Control and Prevention
Atlanta, Georgia, USA

Sandra S. Richter, MD, D(ABMM)
Recording Secretary
Cleveland Clinic
Cleveland, Ohio, USA

Patricia A. Bradford, PhD
 AstraZeneca Pharmaceuticals
 Waltham, Massachusetts, USA

William A. Craig, MD
 University of Wisconsin
 Madison, Wisconsin, USA

George M. Eliopoulos, MD
 Beth Israel Deaconess Medical Center
 Boston, Massachusetts, USA

Daniel F. Sahm, PhD
 Eurofins Medinet
 Herndon, Virginia, USA

Susan E. Sharp, PhD, D(ABMM)
 Kaiser Permanente - NW
 Portland, Oregon, USA

Jana Swenson, MMSc
 Consultant
 Atlanta, Georgia, USA

Maria M. Traczewski, BS, MT(ASCP)
 The Clinical Microbiology Institute
 Wilsonville, Oregon, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Enterobacteriaceae Working Group

Michael N. Dudley, PharmD, FIDSA
Chairholder
Rempex Pharmaceuticals Inc.
San Diego, California, USA

Patricia A. Bradford, PhD
Recording Secretary
AstraZeneca Pharmaceuticals
Waltham, Massachusetts, USA

Dwight J. Hardy, PhD
Recording Secretary
University of Rochester Medical Center
Rochester, New York, USA

Paul G. Ambrose, PharmD, FIDSA
 ICPD/Ordway Research
 Latham, New York, USA

William A. Craig, MD
 University of Wisconsin
 Madison, Wisconsin, USA

Stephen G. Jenkins, PhD, D(ABMM),
 F(AAM)
 New York Presbyterian Hospital
 New York, New York, USA

Ronald N. Jones, MD
 JMI Laboratories
 North Liberty, Iowa, USA

James S. Lewis, II, PharmD
 University of Texas Health Science
 Center
 San Antonio, Texas, USA

Paul C. Schreckenberger, PhD,
 D(ABMM), F(AAM)
 Loyola University Medical Center
 Maywood, Illinois, USA

Lauri D. Thrupp, MD
 University of California Irvine Medical
 Center
 Orange, California, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Barbara L. Zimmer, PhD
 Siemens Healthcare Diagnostics Inc.
 West Sacramento, California, USA

Fluoroquinolone Breakpoint Working Group

Cynthia L. Fowler, MD
Chairholder
Santa Fe, New Mexico, USA

Jeff Alder, PhD
 Bayer Healthcare
 Pinebrook, New Jersey, USA

Sujata M. Bhavnani, PharmD
 Ordway Research Institute
 Latham, New York, USA

George M. Eliopoulos, MD
 Beth Israel Deaconess Medical
 Center
 Boston, Massachusetts, USA

Robert K. Flamm, PhD
 JMI Laboratories
 North Liberty, Iowa, USA

Mair Powell, MD, FRCP, FRCPath
 MHRA
 London, United Kingdom

L. Barth Reller, MD
 Duke University Medical Center
 Durham, North Carolina, USA

Helio S. Sader, MD, PhD
 JMI Laboratories
 North Liberty, Iowa, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Intrinsic Resistance Working Group

Barbara L. Zimmer, PhD
Chairholder
Siemens Healthcare Diagnostics Inc.
West Sacramento, California, USA

Dyan Luper, BS, MT(ASCP)SM
Recording Secretary
BD Diagnostic Systems
Sparks, Maryland, USA

Jeff Alder, PhD
 Bayer Healthcare
 Pinebrook, New Jersey, USA

Eliana S. Armstrong, PhD
 Achaogen, Inc
 San Francisco, California, USA

Kate Murfitt
 Mt. Auburn Hospital
 Cambridge, Massachusetts, USA

Sandra S. Richter, MD, D(ABMM)
 Cleveland Clinic
 Cleveland, Ohio, USA

Paul C. Schreckenberger, PhD,
 D(ABMM), F(AAM)
 Loyola University Medical Center
 Maywood, Illinois, USA

Susan Sharp, PhD, D(ABMM)
 Kaiser Permanente-NW
 Portland, Oregon, USA

Carole Shubert
 bioMérieux, Inc.
 Hazelwood, Missouri, USA

Richard B. Thomson, Jr., PhD
 Evanston Hospital,
 NorthShoreUniversity HealthSystem
 Evanston, Illinois, USA

Staff

Clinical and Laboratory
 Standards Institute
 Wayne, Pennsylvania, USA

Luann Ochs, MS
Vice President, Standards Development

Tracy A. Dooley, BS, MLT(ASCP)
Staff Liaison

Megan P. Larrisey, MA
Editor

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Clinical and Laboratory Standards Institute
950 West Valley Road, Suite 2500
Wayne, PA 19087 USA
610.688.0100
F: 610.688.0700
www.clsi.org
standard@clsi.org

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Franklin R. Cockerill, III, MD
Matthew A. Wikler, MD, MBA, FIDSA
Jeff Alder, PhD
Michael N. Dudley, PharmD, FIDSA
George M. Eliopoulos, MD
Mary Jane Ferraro, PhD, MPH
Dwight J. Hardy, PhD
David W. Hecht, MD

Janet A. Hindler, MCLS, MT(ASCP)
Jean B. Patel, PhD, D(ABMM)
Mair Powell, MD, FRCP, FRCPath
Jana M. Swenson, MMSc
Richard B. Thomson, Jr., PhD
Maria M. Traczewski, BS, MT(ASCP)
John D. Turnidge, MD
Melvin P. Weinstein, MD
Barbara L. Zimmer, PhD

Abstract

Susceptibility testing is indicated for any organism that contributes to an infectious process warranting antimicrobial chemotherapy, if its susceptibility cannot be reliably predicted from knowledge of the organism's identity. Susceptibility tests are most often indicated when the causative organism is thought to belong to a species capable of exhibiting resistance to commonly used antimicrobial agents.

A variety of laboratory methods can be used to measure the *in vitro* susceptibility of bacteria to antimicrobial agents. This document describes standard broth dilution (macrodilution and microdilution [the microdilution method described in M07 is the same methodology outlined in ISO 20776-1])¹ and agar dilution techniques, and it includes a series of procedures to standardize the way the tests are performed. The performance, applications, and limitations of the current CLSI-recommended methods are also described.

The supplemental information (M100² tables) presented with this standard represents the most current information for drug selection, interpretation, and quality control using the procedures standardized in M07. These tables, as in previous years, have been updated and should replace tables published in earlier years. Changes in the tables since the previous edition (M100-S21³) appear in boldface type and are also summarized in the front of the document.

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Committee Membership

Consensus Committee on Microbiology

John H. Rex, MD, FACP

Chairholder

AstraZeneca

Waltham, Massachusetts, USA

Mary Jane Ferraro, PhD, MPH

Vice-Chairholder

Massachusetts General Hospital

Boston, Massachusetts, USA

Nancy L. Anderson, MMSc, MT(ASCP)
Centers for Disease Control and Prevention
Atlanta, Georgia, USA

Barbara Ann Body, PhD, D(ABMM)

Laboratory Corporation of America

Burlington, North Carolina, USA

Betty (Betz) A. Forbes, PhD, D(ABMM)

Medical College of Virginia Campus

Richmond, Virginia, USA

Thomas R. Fritsche, MD, PhD

Marshfield Clinic

Marshfield, Wisconsin, USA

Freddie Mae Poole, MS, MT

FDA Center for Devices and

Radiological Health

Silver Spring, Maryland, USA

Fred C. Tenover, PhD, D(ABMM)

Cepheid

Sunnyvale, California, USA

John D. Turnidge, MD

SA Pathology At Women's and

Children's Hospital

North Adelaide, Australia

Subcommittee on Antimicrobial Susceptibility Testing

Franklin R. Cockerill, III, MD

Chairholder

Mayo College of Medicine

Rochester, Minnesota, USA

Matthew A. Wikler, MD, MBA,

FIDSA

Vice-Chairholder

IASO Pharma, Inc.

San Diego, California, USA

Jeff Alder, PhD

Bayer Healthcare

Pinebrook, New Jersey, USA

Michael N. Dudley, PharmD,

FIDSA

Rempex Pharmaceuticals, Inc.

San Diego, California, USA

George M. Eliopoulos, MD

Beth Israel Deaconess Medical
Center

Boston, Massachusetts, USA

Dwight J. Hardy, PhD

University of Rochester Medical

Center

Rochester, New York, USA

David W. Hecht, MD

Loyola University Medical Center

Maywood, Illinois, USA

Janet A. Hindler, MCLS,

MT(ASCP)

UCLA Medical Center

Los Angeles, California, USA

Jean B. Patel, PhD, D(ABMM)

Centers for Disease Control and

Prevention

Atlanta, Georgia, USA

Mair Powell, MD, FRCP,

FRCPATH

MHRA

London, United Kingdom

Richard B. Thomson, Jr., PhD

Evanston Hospital, NorthShore

University HealthSystem

Evanston, Illinois, USA

John D. Turnidge, MD

SA Pathology at Women's and

Children's Hospital

North Adelaide, Australia

Melvin P. Weinstein, MD

Robert Wood Johnson University

Hospital

New Brunswick, New Jersey, USA

Barbara L. Zimmer, PhD

Siemens Healthcare Diagnostics,

Inc.

West Sacramento, California, USA

Acknowledgment

CLSI and the Consensus Committee on Microbiology gratefully acknowledge the following individuals for their help in preparing this document:

Mary Jane Ferraro, PhD, MPH

Massachusetts General Hospital

Boston, Massachusetts, USA

Maria M. Traczewski, BS, MT(ASCP)

The Clinical Microbiology Institute

Wilsonville, Oregon, USA

Jana M. Swenson, MMSc

Consultant

Atlanta, Georgia, USA

Text and Table Working Group

Jana M. Swenson, MMSc
Chairholder
Consultant
Atlanta, Georgia, USA

Maria M. Traczewski, BS, MT(ASCP)
Recording Secretary
The Clinical Microbiology Institute
Wilsonville, Oregon, USA

David J. Farrell, PhD, D(ABMM)
 JMI Laboratories
 North Liberty, Iowa, USA

Janet A. Hindler, MCLS, MT(ASCP)
 UCLA Medical Center
 Los Angeles, California, USA

Judy Johnston, MS
 Siemens Healthcare Diagnostics, Inc.
 West Sacramento, California, USA

Dyan Luper, BS, MT(ASCP)SM
 BD Diagnostic Systems
 Sparks, Maryland, USA

Linda M. Mann, PhD, D(ABMM)
 Siemens Healthcare Diagnostics, Inc.
 West Sacramento, California, USA

Frederic J. Marsik, PhD, ABMM
 FDA Center for Drug Evaluation and
 Research
 Silver Spring, Maryland, USA

Susan D. Munro, MT(ASCP)
 Campbell, California, USA

Flavia Rossi, MD
 University of Sao Paulo
 Sao Paulo, Brazil

Jeff Schapiro
 Kaiser Permanente
 Almo, California, USA

Dale A. Schwab, PhD, D(ABMM)
 Quest Diagnostics, Nichols Institute
 San Juan Capistrano, California, USA

Albert T. Sheldon, Jr., PhD
 Antibiotic & Antiseptic Consultants
 Cypress, Texas, USA

Richard B. Thomson, Jr., PhD
 Evanston Hospital, NorthShore
 University HealthSystem
 Evanston, Illinois, USA

Mary K. York, PhD, ABMM
 MKY Microbiology Consulting
 Walnut Creek, California, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson Medical School
 New Brunswick, New Jersey, USA

Quality Control Working Group

Steve Brown, PhD, ABMM
Co-Chairholder
The Clinical Microbiology Institute
Wilsonville, Oregon, USA

Sharon K. Cullen, BS, RAC
Co-Chairholder
Siemens Healthcare Diagnostics
West Sacramento, California, USA

William Brasso
 BD Diagnostic Systems
 Sparks, Maryland, USA

Stephen Hawser, PhD
 IHMA
 Schaumburg, Illinois, USA

Janet A. Hindler, MCLS, MT(ASCP)
 UCLA Medical Center
 Los Angeles, California, USA

Michael D. Huband
 Pfizer Global R&D
 Groton, Connecticut, USA

Ronald N. Jones, MD
 JMI Laboratories
 North Liberty, Iowa, USA

Ann Macone
 Paratek Pharmaceuticals, Inc.
 Boston, Massachusetts, USA

Ross Mulder, MT(ASCP)
 bioMérieux, Inc.
 Hazelwood, Missouri, USA

Susan D. Munro, MT(ASCP)
 Campbell, California, USA

Jean Patel, PhD, D(ABMM)
 Centers for Disease Control and
 Prevention
 Atlanta, Georgia, USA

Robert P. Rennie, PhD
 University of Alberta Hospital
 Edmonton, Alberta, Canada

Frank O. Wegerhoff, PhD
 Covance Central Laboratory Services
 Inc.
 Indianapolis, Indiana, USA

Staphylococcal and Streptococcal Working Group

Jean B. Patel, PhD, D(ABMM)
Chairholder
Centers for Disease Control and Prevention
Atlanta, Georgia, USA

Sandra S. Richter, MD, D(ABMM)
Recording Secretary
Cleveland Clinic
Cleveland, Ohio, USA

Patricia A. Bradford, PhD
 AstraZeneca Pharmaceuticals
 Waltham, Massachusetts, USA

William A. Craig, MD
 University of Wisconsin
 Madison, Wisconsin, USA

George M. Eliopoulos, MD
 Beth Israel Deaconess Medical Center
 Boston, Massachusetts, USA

Daniel F. Sahn, PhD
 Eurofins Medinet
 Herndon, Virginia, USA

Susan E. Sharp, PhD, D(ABMM)
 Kaiser Permanente - NW
 Portland, Oregon, USA

Jana Swenson, MMSc
 Consultant
 Atlanta, Georgia, USA

Maria M. Traczewski, BS, MT(ASCP)
 The Clinical Microbiology Institute
 Wilsonville, Oregon, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Enterobacteriaceae Working Group

Michael N. Dudley, PharmD, FIDSA
Chairholder
Rempex Pharmaceuticals
San Diego, California, USA

Patricia A. Bradford, PhD
Recording Secretary
AstraZeneca Pharmaceuticals
Waltham, Massachusetts, USA

Dwight J. Hardy, PhD
Recording Secretary
University of Rochester Medical Center
Rochester, New York, USA

Paul G. Ambrose, PharmD, FIDSA
 ICPD/Ordway Research
 Latham, New York, USA

William A. Craig, MD
 University of Wisconsin
 Madison, Wisconsin, USA

Stephen G. Jenkins, PhD, D(ABMM),
 F(AAM)
 New York Presbyterian Hospital
 New York, New York, USA

Ronald N. Jones, MD
 JMI Laboratories
 North Liberty, Iowa, USA

James S. Lewis, II, PharmD
 University of Texas Health Science
 Center
 San Antonio, Texas, USA

Paul C. Schreckenberger, PhD,
 D(ABMM), F(AAM)
 Loyola University Medical Center
 Maywood, Illinois, USA

Lauri D. Thrupp, MD
 University of California Irvine Medical
 Center
 Orange, California, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Barbara L. Zimmer, PhD
 Siemens Healthcare Diagnostics, Inc.
 West Sacramento, California, USA

Fluoroquinolone Breakpoint Working Group

Cynthia L. Fowler, MD
Chairholder
Sante Fe, New Mexico, USA

Jeff Alder, PhD
 Bayer Healthcare
 Pinebrook, New Jersey, USA

Sujata M. Bhavnani, PharmD
 Ordway Research Institute
 Latham, New York, USA

George M. Eliopoulos, MD
 Beth Israel Deaconess Medical Center
 Boston, Massachusetts, USA

Robert K. Flamm, PhD
 JMI Laboratories
 North Liberty, Iowa, USA

Mair Powell, MD, FRCP, FRCPath
 MHRA
 London, United Kingdom

L. Barth Reller, MD
 Duke University Medical Center
 Durham, North Carolina, USA

Helio S. Sader, MD, PhD
 JMI Laboratories
 North Liberty, Iowa, USA

Melvin P. Weinstein, MD
 Robert Wood Johnson University
 Hospital
 New Brunswick, New Jersey, USA

Intrinsic Resistance Working Group

Barbara L. Zimmer, PhD
Chairholder
Siemens Healthcare Diagnostics, Inc.
West Sacramento, California, USA

Sandra S. Richter, MD, D(ABMM)
 Cleveland Clinic
 Cleveland, Ohio, USA

Dyan Luper, BS, MT(ASCP)SM
Recording Secretary
BD Diagnostic Systems
Sparks, Maryland, USA

Paul C. Schreckenberger, PhD,
 D(ABMM), F(AAM)
 Loyola University Medical Center
 Maywood, Illinois, USA

Jeff Alder, PhD
 Bayer Healthcare
 Pinebrook, New Jersey, USA

Susan Sharp, PhD, D(ABMM)
 Kaiser Permanente - NW
 Portland, Oregon, USA

Eliana S. Armstrong, PhD
 Achaogen, Inc
 San Francisco, California, USA

Carole Shubert
 bioMérieux, Inc.
 Hazelwood, Missouri, USA

Kate Murfitt
 Mt. Auburn Hospital
 Cambridge, Massachusetts, USA

Richard B. Thomson, Jr., PhD
 Evanston Hospital, NorthShore
 University HealthSystem
 Evanston, Illinois, USA

Staff

Clinical and Laboratory Standards Institute
 Wayne, Pennsylvania, USA

Luann Ochs, MS
Vice President, Standards Development

Tracy A. Dooley, BS, MLT(ASCP)
Staff Liaison

Megan P. Larrisey, MA
Editor

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It has been a distinct honor to serve as Chairholder of the Subcommittee on Antimicrobial Susceptibility Testing during the last three years. Many members of the subcommittee (which now numbers more than 180 volunteers including members, advisors, and observers) have been indispensable in the preparation of these documents. In addition, I would like to thank the working group chairholders of the Subcommittee on Antimicrobial Susceptibility Testing for their valuable contributions during the last three years. Those individuals who are not listed in the committee and working group lists in this document are as follows:

Karen Bush, PhD
 Indiana University
 Bloomington, Indiana, USA

James H. Jorgensen, PhD
 University of Texas Health Science Center
 San Antonio, Texas, USA

– Franklin R. Cockerill, III, MD
Chairholder, Subcommittee on Antimicrobial Susceptibility Testing

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