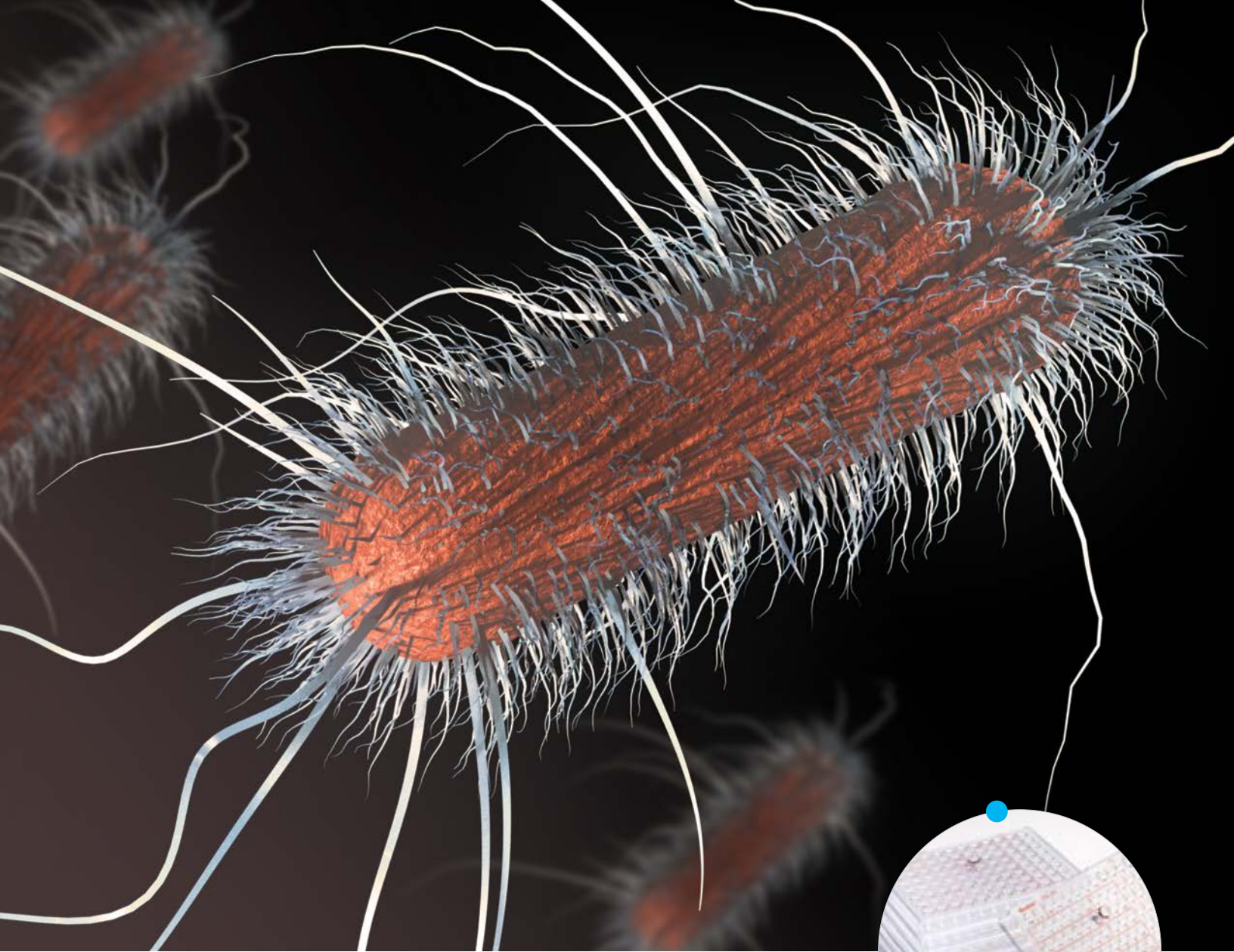




ACCURACY MATTERS »

Deliver automated antibiotic susceptibility testing (AST) and rapid identification (ID) results without sacrificing accuracy.

MicroScan Microbiology Systems



» Move healthcare forward.



“In the first year we had the MicroScan [system], we saved over \$70,000 in send-out costs alone because the MicroScan [system] could identify isolates that our previous system could not.”

Jennifer Blakeney, M.T. (ASCP), Lead Microbiology/Immunology Technologist
Beebe Medical Center Laboratory, Delaware, U.S.A.



ACCURACY MATTERS

Preventing the spread of antimicrobial-resistant (AMR) bacteria within hospitals and communities requires correct identification of AMR pathogens as quickly as possible. MicroScan systems **use direct MICs for the detection of emerging resistance**, providing accurate and timely results without reliance on historical data.

Get answers right the first time

> Accurate drug-bug performance

The fewest clinically significant drug-bug limitations of any automated ID/AST system result in fewer repeat and confirmatory tests¹

> Streamlined workflow

Prompt™ system streamlines workflow and supports testing for the majority of the routine samples

> Powerful reporting

MIC and susceptibility results that correlate with classical broth microdilution and disk diffusion in the most trusted way^{2,3}

> Real-time alerts

LabPro Alert_{EX} automates detection of atypical results for quick recognition and reporting

Backed by more than 40 years of ID/AST testing experience, MicroScan microbiology systems improve workflow by minimizing the need for confirmatory retesting and providing accurate, first-time results for laboratories of every size.



40 40 YEARS OF
MICROBIOLOGY
EXPERTISE
MicroScan



ACCURATE SOLUTIONS FOR EVERY LABORATORY

MicroScan systems

Designed to work in laboratories of every size, **MicroScan microbiology systems use a single-panel format that enables scalability.** With unmatched microbiology and laboratory workflow expertise, Beckman Coulter serves as a trusted partner to deliver accurate solutions that meet evolving requirements.

DxM MicroScan WalkAway system

- › Ideal for mid- to high-capacity laboratories
- › 40- and 96-panel capacity models
- › Automated incubation, test interpretation and reagent control
- › Conventional overnight ID/AST and/or specialty and rapid ID testing on one instrument



MicroScan autoSCAN-4 system

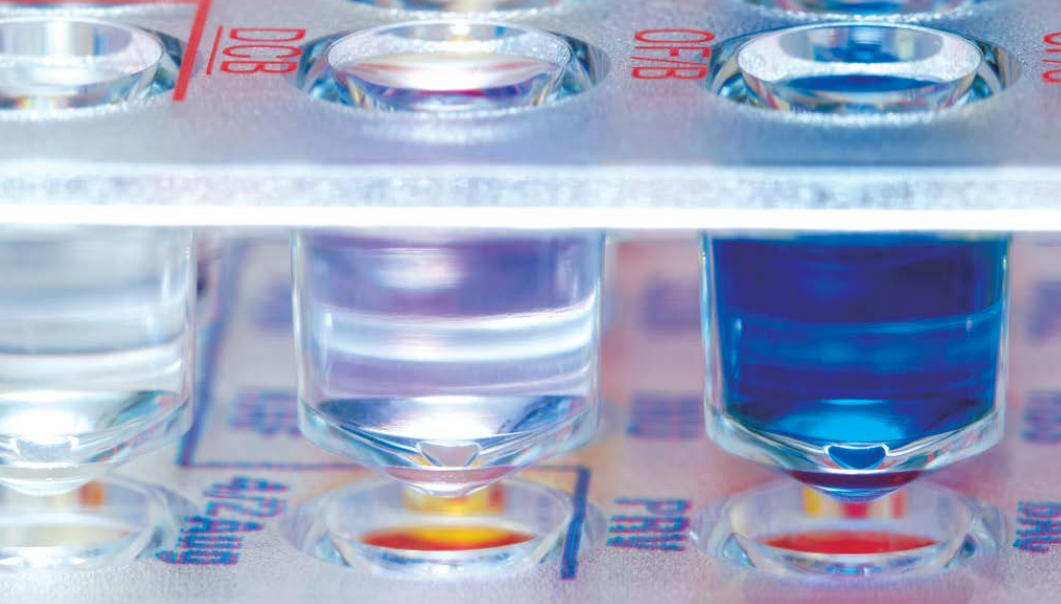
- › Ideal for small-capacity laboratories or backup testing
- › Automated read of bacterial ID and susceptibility in seconds
- › Testing for difficult and slow-growing species
- › Automatic recording and interpretation of instrument results by computerized system



MicroScan delivers accurate emerging-resistance detection for the toughest pathogens, including Vancomycin-intermediate *Staphylococcus aureus* (VISA), Vancomycin-resistant *Staphylococcus aureus* (VRSA) and Methicillin-resistant *Staphylococcus aureus* (MRSA).

“The MicroScan unit is an overnight testing system that is a true growth/no growth system, which gives you the most accurate results. It offers the flexibility of either a full MicroScan MIC panel or combination identification and susceptibility panel. The MicroScan [system] has been very consistent and reliable, attested by the fact that we have 10 of them.”

James Clark, M.T. (ASCP), Microbiology Manager
Alverno Clinical Laboratories, Indiana, U.S.A.



MicroScan panels provide superior accuracy in detection of carbapenemase-resistant *Enterobacteriaceae* (CRE), a globally and CDC-identified health risk.^{2,4,5}

MicroScan panels

Today's microbiology laboratories face continuous change—change in antimicrobial resistance, change in formularies and therapies and change in the healthcare landscape. For more than 40 years, **MicroScan systems have provided gold-standard⁶ bacterial identification and susceptibility products, confronting emerging resistance with speed and accuracy.** Count on MicroScan systems for unmatched accuracy, reliability, ease of use and selection.

MicroScan offers a broad choice of panel formats:

- › Conventional overnight panels
- › Rapid ID panels
- › Specialty ID panels
- › MICroSTREP *plus* panels
- › ESBL *plus* panels

Fewest FDA limitations

MicroScan panels offer the fewest clinically significant FDA limitations and adhere to guidelines established by all the major microbiology standards organizations, including Clinical and Laboratory Standards Institute (CLSI) and European Committee on Antimicrobial Susceptibility Testing (EUCAST).

Maximize workflow flexibility with a choice of three panel testing options:

- › ID-only
- › AST-only
- › ID/AST-combo

“The rapid negative ID panels are very useful to us. We see a lot of challenging organisms with non-fermenters and these panels do an awesome job with these organisms.”

Angela Beth Prouse, M.S. M.T. (ASCP), Clinical Microbiologist, Peninsula Regional Medical Center, Maryland, U.S.A.



MAKE ACCURATE RESULTS ACTIONABLE

LabPro software suite

Enhanced data management improves laboratory efficiency by streamlining workflow and making information about patient care easily accessible. Collectively, the LabPro Information Manager, LabPro Alert_{EX}, LabPro Connect and LabPro-MBT help standardize and consolidate testing regimens. Adaptable to unique laboratory requirements, they provide crucial alerts and suggestions about atypical results in real time.



LabPro Information Manager

- › Powerful management of microbiology results—from order to LIS transmission—increases efficiency
- › Easy-to-use and customizable software provides customers with the flexibility to make results actionable

LabPro Alert_{EX}

- › Automate detection of atypical results for quick reporting
- › Enable customization of interpretive MIC breakpoints
- › Direct staff to the most appropriate action based on customized institutional procedures

LabPro Connect

- › Manage identification and antibiotic susceptibility testing (ID/AST) data right from the laboratory workstation
- › Consolidate data from multiple testing systems, for epidemiology and other management reports, right in the laboratory office
- › Choose between a closed or open system on the laboratory's local area network (LAN)

LabPro-MBT

- › Combine antibiotic susceptibility testing (AST) results with rapid MALDI identifications within LabPro
- › Apply LabPro and Alert_{EX} customization rules for seamless results management

STREAMLINE WORKFLOW

Prompt™ Inoculation System and RENOK Rehydrating Inoculator

Simultaneously inoculate all 96 wells of MicroScan ID, AST and combo panels



Select colonies with Prompt

Standardize inocula without time-consuming turbidity using the Prompt Inoculation System.



Prepare inoculum with Prompt

Inoculum stability of up to four hours allows for flexibility in the workflow.



Inoculate panel with RENOK

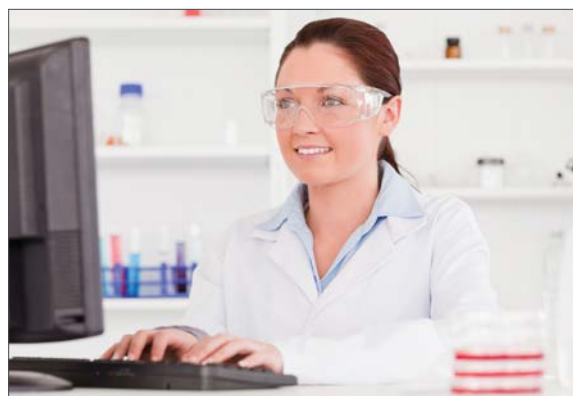
Simultaneous inoculation of all 96 wells of the panel simplifies the workflow.



Get results with the MicroScan system

Use the LabPro software suite for customizable data analysis and management.

The MicroScan panel guide and Biotype Lookup Program online tools help streamline the panel selection and provide 24/7 access to Beckman Coulter's powerful database of atypical organisms.



"I love LabPro Connect. It made a real difference—particularly in our unusually shaped laboratory, where we used to be bunched up to read results on the computer. We can now read results, resolve exceptions and reorder panels from wherever we are sitting, saving us time and eliminating congestion."

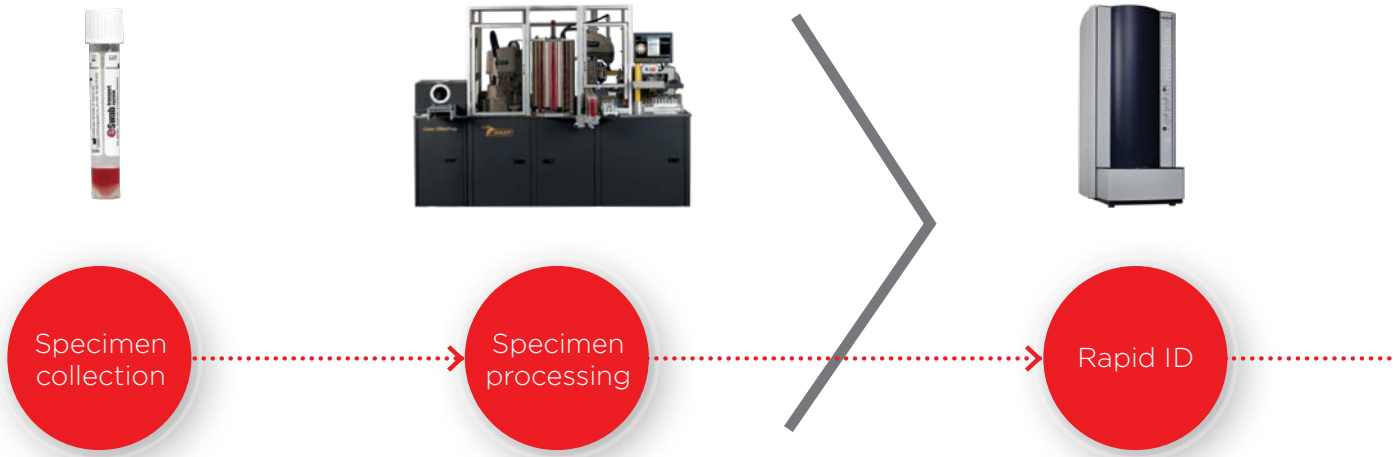
Angela Beth Prouse, M.S. M.T. (ASCP)
Clinical Microbiologist
Peninsula Regional Medical Center,
Maryland, U.S.A.



DISCOVER THE SMART CHOICE IN MICROBIOLOGY AUTOMATION

Pre-analytical

Analytical



Copan ESwab™

- › Standardizes collection of diverse specimen types (e.g., sputum, blood, urine, stool, etc.)
- › Provides the only liquid-based, multipurpose system that maintains viability of aerobic, anaerobic and fastidious bacteria
- › Facilitates automation and elutes samples in seconds

Copan WASP® DT: Walk-Away Specimen Processor

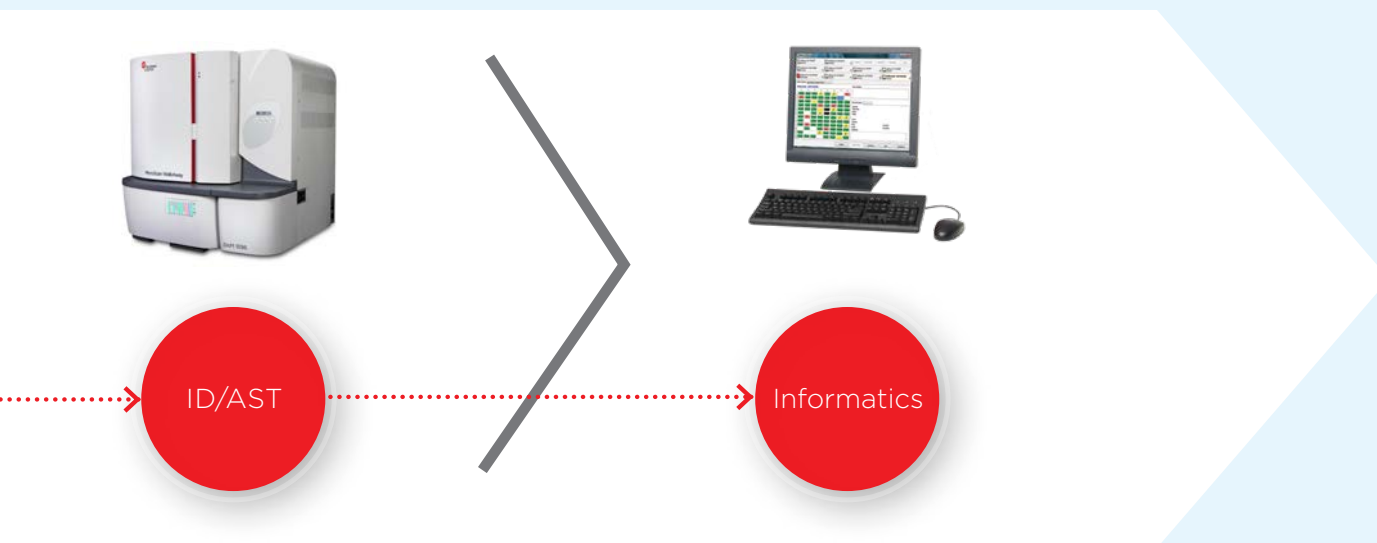
- › Automates all core aspects of microbiology specimen processing
- › Delivers dual-streaking capability, allowing customer to use bi-plates and provides cost savings
- › Allows future addition of new modules with its modular design—including WASPLab for robotic incubation and digital culture analysis

Bruker MALDI Biotyper® system

- › Offers rapid organism identification, which complements ID/AST testing on the MicroScan WalkAway *plus* System
- › Applies to a wide range of microorganisms with accuracy comparable to nucleic acid sequencing
- › Achieves cost-effective, faster identification than traditional methods

Beckman Coulter's integrated solution provides best-in-class technologies, expert consultations and top-ranked support.⁷ This comprehensive approach fully automates pre-analytical, analytical and post-analytical tasks, saving time, reducing overhead, and ultimately improving patient care.

Post-analytical



DxM MicroScan WalkAway system

- › Delivers gold-standard accuracy for microorganism identification and susceptibility testing
- › Enables simultaneous processing of conventional, rapid and specialty panels on a single, automated platform
- › Provides accurate emerging resistance detection for the toughest pathogens including VISA, VRSA, MRSA and CRE

LabPro information management systems

- › Increases efficiency in busy and complex laboratories through powerful data management of laboratory test results—from order to LIS transmission

“Partnering with Beckman Coulter is helping us reduce costs and improve the consistency of our work.”

Dale Kahn, M.T. (ASCP), Central Laboratory Operations Director, Alverno Clinical Laboratories, Indiana, U.S.A.



AN EXTENSIVE ORGANISM IDENTIFICATION DATABASE⁸

MicroScan conventional panels identify a broad scope of organisms isolated in today's microbiology laboratory.

Gram-positive

Staphylococcus and related genera

Kocuria kristinae
Listeria monocytogenes
Micrococcus and related species
Rothia dentocariosa
Rothia mucilaginosa
Staphylococcus aureus
Staphylococcus auricularis
Staphylococcus capitis ssp. *capitis*
Staphylococcus capitis ssp. *ureolyticus*
Staphylococcus cohnii ssp. *cohnii*
Staphylococcus cohnii ssp. *urealyticus*
Staphylococcus epidermidis
Staphylococcus haemolyticus
Staphylococcus hominis ssp. *hominis*
Staphylococcus hominis ssp. *novobiosepticus*
Staphylococcus hyicus
Staphylococcus intermedius
Staphylococcus lugdunensis
Staphylococcus saprophyticus
Staphylococcus schleiferi ssp. *coagulans*
Staphylococcus schleiferi ssp. *schleiferi*
Staphylococcus sciuri
Staphylococcus simulans
Staphylococcus warneri
Staphylococcus xylosus

Streptococcaceae

Aerococcus urinae
Aerococcus viridans
Enterococcus avium
Enterococcus casseliflavus
Enterococcus durans/hirae
Enterococcus faecalis
Enterococcus faecium
Enterococcus gallinarum
Enterococcus raffinosus
Gemella species
Leuconostoc species
Pediococcus species
Rhodococcus equi
Streptococcus agalactiae (Group B)
Streptococcus anginosus group
Streptococcus bovis group
Streptococcus dysgalactiae group
Streptococcus equi group
Streptococcus iniae
Streptococcus mitis/oralis
Streptococcus mutans
Streptococcus parasanguinis
Streptococcus pneumoniae
Streptococcus pyogenes (Group A)
Streptococcus salivarius
Streptococcus sanguinis

Gram-negative

Glucose fermenters

<i>Aeromonas caviae</i> complex	<i>Escherichia hermannii</i>	<i>Salmonella enterica</i> serotype Paratyphi A
<i>Aeromonas hydrophila</i> complex	<i>Escherichia vulneris</i>	<i>Salmonella enterica</i> serotype Typhi
<i>Aeromonas veronii</i> complex	<i>Ewingella americana</i>	<i>Salmonella enterica</i> ssp. <i>arizonae</i>
<i>Cedecea davisae</i>	<i>Grimontia hollissae</i>	<i>Serratia ficaria</i>
<i>Cedecea lapagei</i>	<i>Hafnia alvei</i>	<i>Serratia fonticola</i>
<i>Cedecea neteri</i>	<i>Klebsiella oxytoca</i>	<i>Serratia liquefaciens</i> complex
<i>Cedecea species 3</i>	<i>Klebsiella ozaenae</i>	<i>Serratia marcescens</i>
<i>Cedecea species 5</i>	<i>Klebsiella pneumoniae</i>	<i>Serratia odorifera</i>
<i>Chromobacterium violaceum</i>	<i>Klebsiella rhinoscleromatis</i>	<i>Serratia plymuthica</i>
<i>Citrobacter amalonaticus</i>	<i>Kluyvera ascorbata</i>	<i>Serratia rubidaea</i>
<i>Citrobacter braakii</i>	<i>Kluyvera cryocrescens</i>	<i>Shigella sonnei</i>
<i>Citrobacter farmeri</i>	<i>Kluyvera intermedia</i>	<i>Shigella species</i>
<i>Citrobacter freundii</i>	<i>Leclercia adecarboxylata</i>	<i>Tatumella tyseos</i>
<i>Citrobacter gillenii</i>	<i>Leminorella grimmontii</i>	<i>Vibrio alginolyticus</i>
<i>Citrobacter koseri</i>	<i>Leminorella richardii</i>	<i>Vibrio cholerae</i>
<i>Citrobacter murlinae</i>	<i>Mannheimia haemolytica</i>	<i>Vibrio fluvialis/furnissii</i>
<i>Citrobacter rodentium</i>	<i>Moellerella wisconsensis</i>	<i>Vibrio metschnikovii</i>
<i>Citrobacter sedlakii</i>	<i>Morganella morganii</i>	<i>Vibrio mimicus</i>
<i>Citrobacter werkmanii</i>	<i>Pantoea agglomerans</i> group	<i>Vibrio parahaemolyticus</i>
<i>Citrobacter youngae</i>	<i>Pasteurella aerogenes</i>	<i>Vibrio species group</i>
<i>Cronobacter sakazakii</i>	<i>Pasteurella multocida</i>	<i>Vibrio vulnificus</i>
<i>Edwardsiella tarda</i>	<i>Photobacterium damsela</i>	<i>Yersinia enterocolitica</i>
<i>Enterobacter aerogenes</i>	<i>Photobacterium luminescens</i>	<i>Yersinia frederiksenii/intermedia</i>
<i>Enterobacter amnigenus 1</i>	<i>Plesiomonas shigelloides</i>	<i>Yersinia pestis</i>
<i>Enterobacter amnigenus 2</i>	<i>Proteus mirabilis</i>	<i>Yersinia pseudotuberculosis</i>
<i>Enterobacter asburiae</i>	<i>Proteus penneri</i>	<i>Yersinia ruckeri</i>
<i>Enterobacter cancerogenus</i>	<i>Proteus vulgaris</i>	<i>Yokenella regensburgei</i>
<i>Enterobacter cloacae</i>	<i>Providencia alcalifaciens</i>	
<i>Enterobacter gergoviae</i>	<i>Providencia rettgeri</i>	
<i>Enterobacter hormaechei</i>	<i>Providencia rustigianii</i>	
<i>Escherichia albertii</i>	<i>Providencia stuartii</i>	
<i>Escherichia coli</i>	<i>Raoultella ornithinolytica</i>	
<i>Escherichia coli</i> (inactive)	<i>Salmonella enterica</i>	
<i>Escherichia fergusonii</i>	<i>Salmonella enterica</i> serotype Choleraesuis	

Glucose non-fermenters

<i>Achromobacter piechaudii</i>	<i>Cupriavidus pauculus</i>	<i>Ralstonia mannitolilytica</i>
<i>Achromobacter species</i>	<i>Cupriavidus species</i>	<i>Ralstonia pickettii</i>
<i>Achromobacter xylosoxidans/denitrificans</i>	<i>Delftia acidovorans</i>	<i>Rhizobium radiobacter</i>
<i>Acinetobacter baumannii</i> complex/haemolyticus	<i>Elizabethkingia meningoseptica</i>	<i>Roseomonas species</i>
<i>Acinetobacter lwoffii</i> group	<i>Empedobacter brevis</i>	<i>Shewanella algae</i>
<i>Alcaligenes faecalis</i>	<i>Myroides species</i>	<i>Shewanella putrefaciens</i>
<i>Bordetella bronchiseptica</i>	<i>Ochrobactrum anthropi</i>	<i>Sphingobacterium multivorum</i>
<i>Bordetella trematum</i>	<i>Paracoccus yeei</i> (CDC group EO-2)	<i>Sphingobacterium spiritivorum</i>
<i>Brevundimonas diminuta</i>	<i>Pseudomonas aeruginosa</i>	<i>Sphingomonas paucimobilis</i>
<i>Brevundimonas vesicularis</i>	<i>Pseudomonas alcaligenes/pseudoalcaligenes</i>	<i>Stenotrophomonas maltophilia</i>
<i>Burkholderia cepacia</i> complex	<i>Pseudomonas fluorescens/pseudomonas putida</i>	<i>Wautersiella falsenii</i>
<i>Burkholderia gladioli</i>	<i>Pseudomonas luteola</i>	<i>Weeksella virosa</i>
<i>Burkholderia pseudomallei</i>	<i>Pseudomonas mendocina</i>	
<i>Chryseobacterium indologenes</i>	<i>Pseudomonas oryzae</i>	
<i>Comamonas testosteroni</i>	<i>Pseudomonas stutzeri</i>	



MicroScan SYSTEMS PROVIDE ACCURATE RESULTS FOR EVERY LABORATORY

Accuracy matters

The DxM MicroScan WalkAway system uses real MIC technology to provide accurate results that laboratories need to operate efficiently.

Scalable solutions for every laboratory

MicroScan systems are available in three sizes:

- › MicroScan autoSCAN-4 system
- › DxM 1040 MicroScan WalkAway system
- › DxM 1096 MicroScan WalkAway system

Resistance detection done right

Available panel types for use with MicroScan systems include:

- › Conventional panels
- › Rapid ID panels
- › Specialty ID panels
- › MICroSTREP *plus* panels
- › ESβL *plus* panels

Make accurate results actionable

Beckman Coulter's advanced software programs—LabPro Information Manager, LabPro Connect and LabPro Alert_{EX}—are adaptable to unique laboratory requirements and provide crucial alerts and suggestions about atypical results.

Streamline workflow

With sophisticated tools to support efficient workflow, including the Prompt Inoculation System and the RENOK Rehydrating Inoculator, MicroScan systems help achieve quick and accurate results.

The smart choice in microbiology automation

Beckman Coulter's smart microbiology automation solution combines the proven accuracy of the MicroScan product family with powerful workflow efficiencies delivered by Copan WASP and Bruker MALDI Biotyper systems.





THE SMART MICROBIOLOGY AUTOMATION SOLUTION

Discover what Beckman Coulter can offer.

Visit www.beckmancoulter.com/microbiology to see how Beckman Coulter's microbiology automation is benefiting laboratories and improving patient care.

Not all products are available in all countries. Please contact your local sales representative for more information.

¹The assessment of clinically significant limitations is based upon a tabulation of CLSI Group A and B test and report recommendations published in the M100 guidance documents (excluding species with natural resistance) and 1st and 2nd drugs of choice published in *The Medical Letter's Handbook of Antimicrobial Therapy*, compared with the related FDA 510K summaries, device manufacturer's package inserts and product recall information. M100-S17, 2017.

²Bulik CC et al. *J Clin Microbiol.* 2010 July; 48(7): 2402-2406.

³Gallon O et al. *J Clin Microbiol.* 2011 June; 49(6): 2269-2271.

⁴Anderson KF et al. *J Clin Microbiol.* 2007 August; 45(8): 2723-2725.

⁵Woodford N et al. *J Clin Microbiol.* 2010 August; 48(8): 2999-3002.

⁶Kalorama *United States Market for In Vitro Diagnostic Tests*, 2017, pg. 878.

⁷*ServiceTrak Clinical Executive Summary Report for ID/AST Systems*, 2016.

⁸LabPro 4.42 overnight Gram-negative and Gram-positive identification database.

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DxM-Accuracy-Matters-brochure-Microbiology-BR-61452-EN-GLB



 Move healthcare forward.