



## MORE CHOICES, MORE ANSWERS ➤

MicroScan Gram-negative  
and Gram-positive panels

MicroScan Microbiology Systems



➤ Move healthcare forward.



## LABORATORIES ON THE FRONT LINE

Misuse and overuse of antibiotics is a significant factor in the development of antimicrobial resistance, which is recognized as one of the most serious health threats both in the U.S. and worldwide.<sup>1</sup> Inappropriate antibiotic use reduces the therapeutic effectiveness of essential drugs and increases the development and spread of multidrug-resistant organisms. National and global organizations are promoting collaboration in healthcare settings and education about appropriate antimicrobial usage to halt the spread of emerging resistance.

Experts agree that the role of the laboratory has never been more important in helping curb the threats of “superbug” endemic reservoirs and epidemics worldwide as evidenced by:

- › The National Action Plan for Combating Antibiotic-Resistant Bacteria
- › The CDC-developed Carbapenem-resistant Enterobacteriaceae (CRE) Control and Prevention Toolkit
- › Global CRE research and prevention initiatives

**For over 35 years, MicroScan panels have provided gold-standard bacterial identification and susceptibility products, confronting emerging resistance head on.**

MicroScan panels provide **FIRST-TIME ACCURACY** with direct MIC for **TRUSTED DETECTION** of emerging and critical antimicrobial resistance to help you **AVOID DELAYS** associated with extra confirmatory testing and real-time alerts to **ENABLE IMMEDIATE ACTION.**

### Antimicrobial stewardship: collaboration is key

The primary goal of antimicrobial stewardship programs is to optimize antimicrobial dosing, duration and route of administration for each patient while minimizing adverse drug events and the emergence of antimicrobial resistance.<sup>2,3</sup> Microbiologists play an integral role in stewardship programs by proactively reporting critical or unusual results. They also generate various epidemiology reports and antibiogram data to:

- › Guide empiric therapy choices
- › Provide information for therapeutic formulary decisions
- › Track changes in susceptibility patterns and bacterial incidence to identify emerging resistance
- › Direct infection-control investigations
- › Determine effectiveness of infection-control practices



Accurate MicroScan AST results are the foundation of the antibiogram data that clinicians rely on for patient management.

**“Antibiograms play a key role in identifying local and interdepartmental trends in antibiotic susceptibility or resistance. These data are important not only in devising best-treatment practices for the institution, but also in evaluating the impact of a recently implemented ASP (antimicrobial stewardship program).”<sup>4</sup>**



## CRE: AN URGENT HEALTH THREAT

The occurrence of *Klebsiella pneumoniae* carbapenemase (KPC), the most prevalent form of CRE, is endemic. The resistance mechanism in KPCs is plasmid-mediated, meaning it is easily transferrable between strains, species, genera, patients and facilities. Within the laboratory, it is crucial to run antimicrobial susceptibility tests on any identified Gram-negative bacteria to determine if the strain is a CRE. **MicroScan has demonstrated exceptional accuracy for the detection of carbapenem resistance in multicenter studies.<sup>5,6</sup>**

MicroScan's latest Gram-negative panels offer an enhanced testing menu.

- › Carbapenem dilutions encompass CLSI and EUCAST breakpoints
- › Lower dilutions of select antibiotics support evaluation of alternative therapeutic dosing regimens
- › Additional oral drugs provide options for step-down therapies and outpatient management
- › Additional MIC panel selections complement workflows of laboratories choosing to integrate MALDI-TOF identifications or those desiring additional resistance testing



## COLISTIN RESISTANCE IN *E. COLI*: AN EMERGING THREAT

Colistin has long been a last-resort drug for serious infections due to Gram-negative bacteria. In 2015, the first report of plasmid-mediated colistin resistance in Enterobacteriaceae caused by the *mcr-1* gene was published.<sup>7</sup> Since then, numerous countries have reported increased detection of colistin resistance due to the *mcr-1* gene.<sup>8</sup> This has created an urgent need for coordinated global action in the fight against pan-drug-resistant, Gram-negative bacteria.

Recent studies have shown MicroScan panels accurately detect contemporary colistin resistance in Enterobacteriaceae due to the *mcr-1* gene.<sup>7-9</sup>

## Gram-negative MIC panels

Panel name	Neg MIC 39	Neg MIC 40	Neg MIC 44	Neg MIC EN 47	Neg MIC NF 50	Neg MIC EN 51	Neg MIC EN 52	ES $\beta$ L	
MicroScan catalog number	B1016-155	B1016-163	B1016-175	B1016-185	B1016-188	B1016-194	B1016-195	B1027-101	
Therapy guidelines	EUCAST	EUCAST	CLSI or EUCAST	CLSI	CLSI or EUCAST	EUCAST	EUCAST	CLSI or EUCAST	
Languages	DE, E, ES, FR, IT, NO, PT, RU	DE, E, ES, FR, GR, IT, NO, PL, PT, RU	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, IT, NO, PT	ES, FR, PT				
Antimicrobial agent	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	$\mu\text{g/mL}$	Abbr.
Amikacin	4-16	8-16	8-32	8-32	4-32	8-16	8-16	-	Ak
Amoxicillin	1-8	-	-	-	-	-	-	-	Amx
Amoxicillin/K Clavulanate	2/1-8/4	2/1-8/4	8/4-16/8	8/4-16/8	-	2/1-8/4	4/2-32/16	-	Aug
Ampicillin	-	0.5-8	8-16	8-16	-	2-8	2-8	-	Am
Ampicillin/Sulbactam	-	1/0.5-8/4	8/4-16/8	-	4/2-16/8	-	-	-	A/S
Aztreonam	1-16	1, 8-16	1, 4-16	1-16	0.5-16	1-4	1-4	0.5-64	Azt
Cefepime	0.5-8	0.5-8	1-16	1-16	1-32	0.5-8	1-4	1-32	Cpe
Cefixime	1-2	-	-	-	-	-	0.5-1	-	Cfe
Cefotaxime	0.5-2, 16	0.5-2, 16	1-32	1-16	4-64	0.5-64	0.5-32	0.5-128	Cft
ES $\beta$ L Confirmation - Cefotaxime/K Clavulanate	0.5/4, 4/4	0.5/4, 4/4	0.5/4, 4/4	0.5/4, 4/4	-	0.5/4-8/4	0.5/4, 4/4	0.12/4-16/4	Cft/CA
Cefotetan	-	-	-	-	-	-	-	1-32	Ctn
Cefoxitin	2-8, 32	8-16	8-16	8-16	-	8-16	8-16	2-32	Cfx
Cepipodoxime	-	0.5-1	-	-	-	-	1	0.5-64	Cpd
Ceftazidime	0.5-8	0.5-8	1-16	1-16	1-32	0.5-64	0.5-32	0.5-128	Caz
ES $\beta$ L Confirmation - Ceftazidime/K Clavulanate	0.25/4, 2/4	0.25/4, 2/4	0.25/4-0.5/4, 2/4	0.25/4-4/4	-	0.25/4-8/4	0.25/4-4/4	0.12/4-16/4	Caz/ CA
Ceftriaxone	-	0.5-2	-	-	-	-	-	1-64	Cax
Cefuroxime	-	1-8	4-16	4-16	-	4-8	4-8	-	Crm
Cephalothin	8-32	-	8-16	-	-	-	-	-	Cf
Chloramphenicol	-	8	8-16	-	-	8	-	-	C
Ciprofloxacin	0.25-2	0.5-1	0.5-2	0.12, 0.5-2	0.12-2	0.25-1	0.25-1	-	Cp
Colistin	2	2	2-4	2-4	2-4	2-4	2-4	-	Cl
Doxycycline	-	-	-	-	4-8	-	-	-	Dox
Doripenem	1, 4	1-4	1-4	-	-	-	-	-	Dor
Ertapenem	0.5-1	0.5-1	0.5-1	0.25-1	-	0.12-1	0.12, 0.5-1	-	Etp
Fosfomycin	32	32	32-64	32-64	32-64	32-64	32-64	-	Fos
Gentamicin	1-4	2-4	2-8	2-8	1-8	2-4	2-4	-	Gm
Imipenem	0.5-8	1-8	1-8	0.5-8	0.5-16	1-8	1-8	0.5-16	Imp
Levofloxacin	-	1-2	1-4	0.12, 1-4	0.5-4	0.12-1	0.5-1	-	Lvx
Mecillinam	8	-	-	8	-	-	2, 8	-	Mec
Meropenem	-	0.5-8	1-8	0.25-8	0.12-16	0.12, 1-32	0.12-8	0.5-16	Mer
Minocycline	-	-	4-8	4-8	2-8	-	-	-	Min
Moxifloxacin	-	0.5-1	-	-	-	-	-	-	Mxf
Nalidixic Acid	8-16	-	16	16	-	16	16	-	NA
Netilmicin	-	-	-	-	2-8	-	-	-	Nt
Nitrofurantoin	64	64	32-64	32-64	-	-	64	-	Fd
Norfloxacin	0.5-1	0.5-1	0.5-1	0.5-1	-	-	0.5-1	-	Nxn
Ofloxacin	0.5-4	0.5-1	-	2-4	-	-	-	-	Ofl
Piperacillin	8-16, 64	4-16	8-16, 64	8-16, 64	8-64	4-16	4-16	16-64	Pi
Piperacillin/Tazobactam	4/4-16/4, 64/4	4/4-16/4	8/4-16/4, 64/4	8/4-16/4, 64/4	8/4-64/4	4/4-16/4	4/4-16/4	-	P/T
Tetracycline	-	4-8	4-8	-	2-8	-	-	-	Te
Ticarcillin	8-64	-	-	-	8-64	8-16	8-16	-	Ti
Ticarcillin/K Clavulanate	8-64	-	-	-	16/2-64/2	-	-	-	Tim
Tigecycline	1-4	0.25-2	1-2	1-2	-	0.25-2	0.5-2	-	Tgc
Tobramycin	1-4	2-4	2-8	2-8	2-8	2-4	2-4	-	To
Trimethoprim	-	8	-	-	-	-	2-4	-	T
Trimethoprim/Sulfamethoxazole	2/38-4/76	2/38-4/76	2/38-4/76	2/38-4/76	1/19-4/76	2/38-4/76	2/38-4/76	-	T/S
<b>Total antimicrobial agents/panel</b>	<b>29</b>	<b>33</b>	<b>31</b>	<b>28</b>	<b>23</b>	<b>27</b>	<b>32</b>	<b>12</b>	

## Panel definitions

**Neg MIC panels:** Provide Gram-negative susceptibility results only and longer dilution schemes for better detection of emerging resistance. Drug selection provides both Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as urine and systemic reporting.

## Legend

DE: German  
E: English  
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## Gram-negative combo panels

Panel name	Neg Combo 53	Neg Combo 54	Neg Combo 58	Neg Combo 63	Neg Combo 66	Neg EN Combo 70	Neg NF Combo 71	Neg Combo 72	Neg Combo 82	Neg Combo 83	
MicroScan catalog number	B1016-142	B1016-143	B1016-158	B1016-166	B1016-171	B1016-177	B1016-178	B1016-180	B1016-192	B1016-193	
Therapy guidelines	EUCAST	CLSI	EUCAST	CLSI	CLSI	CLSI or EUCAST	CLSI or EUCAST	CLSI	EUCAST	EUCAST	
Languages	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, IT, KO, PT, RU, TR	E, ES, PT	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, IT, KO, PT, RU, TR	DE, E, ES, FR, IT, NO, PT	DE, E, ES, FR, IT, NO, PT	
Antimicrobial agent	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	Abbr.
Amikacin	8-32	8-32	8-32	16-32	16-32	8-32	8-32	16-32	8-16	8-16	Ak
Amoxicillin/K Clavulanate	8/4-16/8	-	-	-	8/4-16/8	8/4-16/8	-	-	4/2-8/4	2/1, 8/4	Aug
Ampicillin	8-16	-	-	8-16	8-16	8-16	-	8-16	4-8	2, 8	Am
Ampicillin/Sulbactam	-	4/2-16/8	4/2-16/8	8/4-16/8	8/4-16/8	-	8/4-16/8	8/4-16/8	-	-	A/S
Aztreonam	1, 8-16	1-16	1-16	4-16	1, 4-8	-	1-16	4-16	1-4	1, 4	Azt
Cefazolin	8-16	-	-	2-4	-	-	-	2-4	-	-	Cfz
Cefepime	1, 8-16	1-16	1-16	2, 8-16	1, 4-8	1, 4-16	1, 4-16	2, 8-16	1-4	1, 4-8	Cpe
Cefotaxime	1-32	-	-	1-2, 8-32	1-2, 8-16	1-16	8-32	1-2, 8-32	1-16	1-2, 16	Cft
ESβL Confirmation - Cefotaxime/K Clavulanate	0.5/4-1/4, 4/4	-	-	0.5/4, 4/4	0.5/4, 4/4	0.5/4-1/4, 4/4	-	0.5/4, 4/4	0.5/4-1/4, 4/4	0.5/4, 4/4	Cft/ CA
Cefoxitin	8-16	-	-	8-16	8-16	8-16	-	8-16	8-16	8	Cfx
Ceftazidime	1, 4-16	1-32	1-32	1, 4-16	1, 4-16	1-8	1-16	1, 4-16	1-8	1, 4-8	Caz
ESβL Confirmation - Ceftazidime/K Clavulanate	0.25/4, 2/4	-	-	0.25/4, 2/4	0.25/4, 2/4	0.25/4-0.5/4, 2/4	-	0.25/4, 2/4	0.25/4, 2/4	0.25/4, 2/4	Caz/ CA
Cefuroxime	4-16	-	-	4-16	8-16	8-16	-	4-16	4-8	4-8	Crm
Cephalothin	8-16	-	-	-	8-16	8-16	-	-	-	-	Cf
Chloramphenicol	-	-	-	-	-	-	-	-	-	8	C
Ciprofloxacin	0.5-2	0.5-2	0.5-2	1-2	1-2	0.5-2	0.5-2	1-2	0.25-1	0.25-1	Cp
Colistin	-	2-4	2-4	2-4	2-4	-	2-4	2-4	-	2-4	Cl
Doripenem	-	-	-	1-2	-	-	1-4	-	-	-	Dor
Ertapenem	0.5-4	-	-	-	0.5-1	0.5-1	-	0.5-2	0.5-1	0.5-1	Etp
Fosfomycin	-	16-64	16-64	-	64	-	-	-	32-64	32	Fos
Gentamicin	2-8	1-8	1-8	4-8	4-8	2-8	2-8	4-8	2-4	2-4	Gm
Imipenem	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	Imp
Levofloxacin	-	1-4	1-4	2-4	2-4	1-4	1-4	2-4	0.5-2	0.5-1	Lvx
Mecillinam	-	-	-	-	-	-	-	-	-	8	Mec
Meropenem	-	1-8	1-8	1-8	1-8	1-8	1-8	1-8	0.12, 2-8, 32	0.12, 2, 8	Mer
Minocycline	-	4-8	4-8	-	-	-	4-8	-	-	-	Min
Nalidixic Acid	16	-	-	-	16	-	-	16	16	16	NA
Nitrofurantoin	-	-	-	-	32-64	-	-	-	-	64	Fd
Norfloxacin	-	-	-	-	4-8	-	-	-	-	-	Nxn
Piperacillin	-	-	-	16, 64	-	-	8-16, 64	-	-	4-16	Pi
Piperacillin/Tazobactam	8/4-16/4, 64/4	8/4-64/4	8/4-64/4	16/4, 64/4	16/4, 64/4	8/4-16/4, 64/4	8/4-16/4, 64/4	16/4, 64/4	8/4-16/4	4/4-16/4	P/T
Tetracycline	-	-	-	-	-	-	-	4-8	-	8	Te
Ticarcillin	-	16-64	8-32	-	-	-	16, 64	-	-	-	Ti
Ticarcillin/K Clavulanate	-	-	-	16, 64	-	-	-	16, 64	-	-	Tim
Tigecycline	1-2	0.5-2	0.5-2	2-4	1-2	1-2	1-2	-	1-2	1-2	Tgc
Tobramycin	2-8	2-8	2-8	4-8	4-8	2-8	2-8	4-8	2-4	2-4	To
Trimethoprim	-	-	-	-	-	-	-	-	-	2-4	T
Trimethoprim/Sulfamethoxazole	2/38	2/38	2/38	2/38	2/38	2/38-4/76	2/38-4/76	2/38	2/38-4/76	2/38-4/76	T/S
<b>Total antimicrobial agents/panel</b>	<b>20</b>	<b>18</b>	<b>18</b>	<b>23</b>	<b>26</b>	<b>19</b>	<b>20</b>	<b>24</b>	<b>21</b>	<b>28</b>	

## Panel definitions

**Neg Combo:** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides both Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as systemic reporting.

**Neg EN Combo (Neg Entero Combo Panel Type 70):** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides Enterobacteriaceae coverage, as well as urine and systemic reporting.

**Neg NF Combo (Neg Non-Entero Combo Panel Type 71):** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides non-Enterobacteriaceae coverage, as well as urine and systemic reporting.

**Neg BP (Breakpoint) Combo:** Provides Gram-negative identification and susceptibility results on Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as urine and systemic reporting. Panel contains shorter dilutions around the breakpoints, allowing for a broader drug menu.

**Neg/Urine Combo:** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides both Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as urine and systemic reporting.

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**TR:** Turkish

### Gram-negative combo panels (continued)

Panel name	Neg BP Combo 42	Neg BP Combo 43	Neg BP Combo 45	Neg BP Combo 46	Neg BP Combo 48	Neg BP Combo 49	Neg BP Combo 50	Neg/Urine Combo 52	Neg/Urine Combo 57	Neg/Urine Combo 59	Neg/Urine Combo 69	Neg/Urine Combo 81	
MicroScan catalog number	B1016-137	B1016-144	B1016-153	B1016-162	B1016-169	B1016-179	B1016-189	B1016-141	B1016-156	B1016-159	B1016-176	B1016-191	
Therapy guidelines	CLSI	CLSI	EUCAST	EUCAST	CLSI	CLSI or EUCAST	CLSI	CLSI	EUCAST	EUCAST	CLSI or EUCAST	EUCAST	
Languages	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, NO, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, NO, PL, PT, RU	DE, E, ES, FR, GR, IT, NO, PL, PT, RU	DE, E, ES, FR, IT, KO, PT, RU	DE, E, ES, FR, IT, NO, PT	DE, E, ES, FR, IT, PL, PT, RU, TR	DE, E, ES, FR, IT, NO, RU, PT	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, IT, NO, RU, PT	DE, E, ES, FR, GR, IT, PL, PT, RU	DE, E, ES, FR, IT, NO, PT	
Antimicrobial agent	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	Abbr.
Amikacin	16-32	16-32	8-16	8-16	16-32	16-32	16-32	-	8-16	-	8-16	8-16	Ak
Amoxicillin	-	-	-	-	-	-	-	-	4-8	-	-	-	Amx
Amoxicillin/K Clavulanate	8/4-16/8	8/4-16/8	8/4-16/8	2/1-8/4	8/4-16/8	-	8/4-16/8	8/4-16/8	4/2-8/4	8/4-16/8	4/2-16/8	8/4, 32/16	Aug
Ampicillin	8-16	8-16	8-16	2-8	-	8-16	8-16	8-16	-	8-16	8-16	4-8	Am
Ampicillin/Sulbactam	-	-	-	-	-	8/4-16/8	8/4-16/8	-	-	-	-	-	A/S
Aztreonam	-	8-16	1, 8	-	4-16	-	4-16	-	1, 8-16	-	-	-	Azt
Cefazolin	8-16	8-16	8-16	-	8-16	-	2-4	8-16	-	8-16	-	-	Cfz
Cefepime	8-16	8-16	1, 8	1, 4-8	8-16	8-16	8-16	1, 8-16	1, 8-16	-	-	1-8	Cpe
Cefixime	-	-	-	-	-	-	-	-	1-2	-	-	1	Cfe
Cefoperazone/Sulbactam	-	-	-	-	16/8-32/16	-	-	-	-	-	-	-	C/S
Cefotaxime	2, 8-32	1-32	1-32	1-2, 16	1-2, 8-32	1-2, 8-32	1-2, 16	1-32	1-2, 16	1-32	1-16	1-16	Cft
ES $\beta$ L Confirmation - Cefotaxime/K Clavulanate	0.5/4, 4/4	0.5/4, 4/4-8/4	0.5/4, 4/4-8/4	0.5/4, 4/4	0.5/4, 4/4	0.5/4, 4/4	0.5/4-1/4, 4/4	0.5/4, 4/4	0.5/4-1/4, 4/4	0.5/4, 4/4	0.5/4-1/4, 4/4	0.5/4-1/4, 4/4	Cft/ CA
Cefoxitin	8	8-16	8-16	8	8-16	8	8-16	8-16	8, 32	8-16	8-16	8-16	Cfx
Cefpodoxime	-	-	-	1	-	-	-	-	-	-	-	-	Cpd
Ceftazidime	1, 4-16	1, 8-16	1, 8-16	1, 4-8	1, 4-16	1, 4-16	1, 4-16	1-16	1, 4-8	1-16	1-16	1-16	Caz
ES $\beta$ L Confirmation - Ceftazidime/K Clavulanate	0.25/4, 2/4	0.25/4, 2/4	0.25/4, 2/4	0.25/4, 2/4	0.25/4, 2/4	0.25/4, 2/4	0.25/4-0.5/4, 2/4	0.25/4, 2/4	0.25/4-0.5/4, 2/4	0.25/4-0.5/4, 2/4	0.25/4-0.5/4, 2/4	0.25/4-0.5/4, 2/4	Caz/ CA
Cefuroxime	4-16	4-16	4-8	4-8	4-16	4-16	4-16	4-16	8	4-16	8-16	4-8	Crm
Cephalexin	-	-	-	-	-	-	-	8-16	8, 32	8-16	-	-	Cf
Chloramphenicol	-	-	-	8	-	-	-	-	-	-	-	-	C
Ciprofloxacin	1-2	1-2	0.5-1	0.5-1	1-2	1-2	1-2	0.5-2	0.5-2	0.5-2	0.5-2	0.25-1	Cp
Colistin	2-4	-	-	2-4	2-4	2-4	2-4	-	2-4	-	-	2-4	Cl
Doripenem	-	-	-	-	1-2	-	-	-	-	-	-	-	Dor
Ertapenem	2-4	1-4	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	1	0.5-1	0.5-1	0.5-1	0.5-1	Etp
Fosfomycin	32	32	32	32	-	32-64	-	16-64	32	16-64	32-64	32-64	Fos
Gentamicin	4-8	4-8	2-4	2-4	4-8	4-8	4-8	2-8	2-4	2-8	2-8	2-4	Gm
Imipenem	4-8	4-8	2-8	2-8	1-8	1-8	1-8	1-8	2-8	1-8	1-8	1-8	Imp
Levofloxacin	2-4	2-4	1-2	1-2	2-4	2-4	2-4	-	-	-	1-4	0.5-1	Lvx
Mecillinam	-	-	-	-	-	-	-	-	8	-	-	8	Mec
Meropenem	1, 4-8	1, 4-8	2-8	2, 8	1-8	1-8	1-8	-	-	-	1-8	-	Mer
Mezlocillin	16, 64	-	-	-	-	-	-	-	-	-	-	-	Mz
Moxifloxacin	0.5-1	-	-	0.5-1	-	0.5-1	0.5-1	-	-	-	-	-	Mxf
Nalidixic Acid	-	-	-	-	-	16	-	16	8-16	16	16	16	NA
Nitrofurantoin	32-64	32-64	32-64	64	-	32-64	32-64	32-64	64	32-64	32-64	32-64	Fd
Norfloxacin	4-8	4-8	0.5-1	0.5-1	-	-	4-8	0.5-1, 4-8	0.5-1	0.5-1	0.5-1	0.5-1	Nxn
Oflloxacin	-	-	-	-	-	-	-	-	0.5-1	-	-	-	Ofl
Piperacillin	16, 64	16, 64	8-16	4-16	-	16, 64	-	-	-	-	-	-	Pi
Piperacillin/Tazobactam	16/4, 64/4	16/4, 64/4	8/4-16/4	4/4-16/4	16/4, 64/4	16/4, 64/4	16/4, 64/4	8/4-16/4, 64/4	8/4-16/4	8/4-16/4, 64/4	8/4-16/4, 64/4	8/4-16/4	P/T
Tetracycline	4-8	4-8	4-8	4-8	4-8	4-8	-	-	4-8	-	-	-	Te
Ticarcillin	-	-	-	-	-	-	-	-	8-16	-	-	8-16	Ti
Ticarcillin/K Clavulanate	-	-	-	-	16, 64	-	-	-	8-16	-	-	-	Tim
Tigecycline	1-2	1-2	1-2	1-2	2-4	1-2	1-2	-	1-2	-	-	-	Tgc
Tobramycin	4-8	4-8	2-4	2-4	-	4-8	4-8	2-8	2-4	2-8	2-8	2-4	To
Trimethoprim	8	-	-	8	-	-	-	-	-	-	-	-	T
Trimethoprim/Sulfamethoxazole	2/38	2/38	2/38-4/76	2/38-4/76	2/38	2/38-4/76	2/38	2/38-4/76	2/38-4/76	2/38-4/76	2/38-4/76	2/38-4/76	T/S
<b>Total antimicrobial agents/panel</b>	<b>28</b>	<b>25</b>	<b>25</b>	<b>28</b>	<b>23</b>	<b>25</b>	<b>25</b>	<b>20</b>	<b>29</b>	<b>20</b>	<b>20</b>	<b>24</b>	

### Panel definitions

**Neg Combo:** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides both Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as systemic reporting.

**Neg EN Combo (Neg Entero Combo Panel Type 70):** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides Enterobacteriaceae coverage, as well as urine and systemic reporting.

**Neg NF Combo (Neg Non-Entero Combo Panel Type 71):** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides non-Enterobacteriaceae coverage, as well as urine and systemic reporting.

**Neg BP (Breakpoint) Combo:** Provides Gram-negative identification and susceptibility results on Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as urine and systemic reporting. Panel contains shorter dilutions around the breakpoints, allowing for a broader drug menu.

**Neg/Urine Combo:** Provides Gram-negative identification and susceptibility results on one panel. Drug selection provides both Enterobacteriaceae and non-Enterobacteriaceae coverage, as well as urine and systemic reporting.

### Legend

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## MRSA: A SERIOUS HEALTH THREAT

Methicillin-resistant *Staphylococcus aureus* (MRSA) outbreaks have been reported by the media for more than a decade. Goals and strategies outlined in the 2015 U.S. National Action Plan for Combating Antibiotic-Resistant Bacteria are intended to significantly reduce the incidence of urgent and serious threats, including MRSA, by 2020.

**MicroScan's latest Gram-positive panels offer an enhanced testing menu.**

- › Ceftaroline\*: a new broad-spectrum cephalosporin with anti-MRSA activity for use in acute bacterial skin and skin structure infections
- › Tigecycline\*: a glycyclcycline antibiotic not affected by major in-class resistance mechanisms with anti-MRSA activity
- › Enhanced formulation of vancomycin improves performance when using the Prompt Inoculation System for *Staphylococcus aureus* testing
- › MIC panel selections complement workflows of laboratories choosing to integrate MALDI-TOF identifications or those desiring additional resistance testing

MicroScan is the first to offer ceftaroline on an automated susceptibility panel.

### Gram-positive MIC panels

Panel name	Pos MIC 32	Pos MIC 33	Pos MIC STA 35	Pos MIC STA 36	Pos MIC E 37	
MicroScan catalog number	B1016-165	B1016-173	B1016-181	B1016-182	B1016-183	
Therapy guidelines	EUCAST	CLSI or EUCAST	CLSI	EUCAST	CLSI or EUCAST	
Languages	DE, E, ES, FR, GR, IT, NO, PL, PT, RU	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, IT, NO, PT	DE, E, ES, FR, IT, NO, PT	DE, E, ES, FR, IT, NO, PT	
Antimicrobial agent	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	Abbr.
Amikacin	-	8-32	8-32	4-16	-	Ak
Amoxicillin/K Clavulanate	0.5/0.25-8/4	4/2-8/4	4/2-8/4	-	2/1-8/4	Aug
Ampicillin	0.5-8	0.25, 4-8	-	-	1-8	Am
Azithromycin	1-2	-	-	0.5-2	-	Azi
Cefepime	4-8	-	-	-	-	Cpe
Cefotaxime	1-2	-	-	-	-	Cft
Cefoxitin screen	4	4	4	4	-	CfxS
Ceftaroline	-	0.5-1	0.5-2	0.12-2	-	Cpt
Cefuroxime	4-8	-	-	-	-	Crm
Chloramphenicol	8	8-16	-	8	8-16	C
Ciprofloxacin	0.5-1	1-2	0.5-2	0.25-2	0.5-2	Cp
Clindamycin	0.25-0.5, 2	0.25-2	0.25-2	0.12-0.5	0.25-1	Cd
Daptomycin	0.5-4	1-4	0.25-4	0.25-1	0.25-4	Dap
Ertapenem	0.5-1	-	-	-	-	Etp
Erythromycin	1-2	0.5-4	0.25-4	0.5-2	0.25-4	E
Fosfomycin	32	32-64	4, 16-64	32	32-64	Fos
Fusidic acid	2	2	2, 16	2, 16	-	FA
Gentamicin	1-4	1-8	1-8	1-4	-	Gm
Gentamicin Synergy Screen	500	500	-	-	500	GmS
Imipenem	2-8	4-8	-	-	2-8	Imp
Inducible Clindamycin Test	4/0.5	4/0.5	4/0.5	4/0.5	-	ICd
Kanamycin	-	-	-	8-16	-	K
Levofloxacin	1-2	1-4	0.5-4	0.5-4	1-4	Lvx
Lincomycin	-	-	-	-	1-8	Lin
Linezolid	0.5-4	1-4	1-4	2-4	1-4	Lzd
Meropenem	2-8	-	-	-	-	Mer
Minocycline	-	1-8	4-8	1	1-8	Min
Moxifloxacin	0.5-1	0.5-1	-	0.25-2	0.25-1	Mxf
Mupirocin	4-8, 256	256	4-8, 256	4-8, 256	-	Mup
Nitrofurantoin	64	32-64	32-64	32-64	32-64	Fd
Norfloxacin	-	4-8	-	-	-	Nxn
Oflloxacin	-	-	1	0.5-2	-	Ofl
Oxacillin	0.25-2	0.25-2	0.25-2	0.25-2	-	Ox
Penicillin	0.03-0.25, 2	0.12-0.25, 8	0.03, 0.12-0.25, 2	0.03-0.12	0.06-8	P
Pristinamycin	-	1-2	-	0.5-2	0.5-2	Prs
Rifampin	0.5-2	0.5-2	0.5-2	0.5-2	0.5-2	Rif
Streptomycin Synergy Screen	1,000	1,000	-	-	1,000	StS
Synercid	1-4	1-4	0.5-2	0.5-2	1-4	Syn
Teicoplanin	1-8	1-16	1-16	1-8	1-16	Tei
Tetracycline	1-2	1-8	1-8	1-2	1-8	Te
Tigecycline	-	-	0.25-1	0.25-1	0.25-1	Tgc
Tobramycin	1-4	1-8	1-8	1-4	-	To
Trimethoprim/Sulfamethoxazole	1/19-4/76	2/38-4/76	1/19-4/76	1/19-4/76	0.25/4.75-2/38	T/S
Vancomycin	0.25-8	0.25-16	0.25-16	0.25-16	0.25-32	Va
<b>Total antimicrobial agents/panel</b>	<b>31</b>	<b>30</b>	<b>26</b>	<b>30</b>	<b>24</b>	

### Panel definitions

**Pos MIC:** Provides Gram-positive susceptibility results only and longer dilution schemes for better detection of emerging resistance. Drug selection provides both staphylococci and enterococci coverage, as well as urine and systemic reporting.

**Pos MIC STA:** Provides susceptibility results for staphylococci Gram-positive organisms.

**Pos MIC E:** Provides susceptibility results for enterococci Gram-positive organisms.

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## Gram-positive combo panels

Panel name	Pos Combo 31	Pos Combo 32	Pos Combo 39	Pos Strep Combo 36	Pos Combo 37	Pos Combo 38	Pos Combo 41	Pos Combo 42	Pos BP Combo 28	Pos BP Combo 29	Pos BP Combo 32	Pos BP Combo 33	
MicroScan catalog number	B1016-139	B1016-140	B1016-167	B1016-154	B1016-160	B1016-161	B1016-172	B1016-174	B1016-138	B1016-145	B1016-152	B1016-164	
Therapy guidelines	CLSI	CLSI	CLSI	EUCAST	EUCAST	EUCAST	CLSI	CLSI or EUCAST	CLSI	CLSI	EUCAST	EUCAST	
Languages	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, GR, IT, PL, PT, RU, TR	DE, E, ES, FR, IT, KO, PT, RU	DE, E, ES FR, IT, NO, PT, RU	DE, E, ES, FR, GR, IT PL, PT, RU	DE, E, ES, FR, GR, IT PL, PT, RU	DE, E, ES, FR, IT, PT, RU	DE, E, ES, FR, GR, IT PL, PT, RU, TR	DE, E, ES, FR, GR, IT PL, PT, RU, TR	DE, E, ES, FR, GR, IT PL, PT, RU, TR	DE, E, ES, FR, GR, IT PL, PT, RU, TR	DE, E, ES, FR, GR, IT PL, PT, RU, TR	
Antimicrobial agent	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	Abbr.
Amikacin	8-32	–	16-32	–	8-32	–	–	–	–	–	–	–	Ak
Amoxicillin/K Clavulanate	4/2	–	4/2	–	4/2-8/4	–	4/2	4/2-8/4	4/2-8/4	4/2	4/2-8/4	2/1-8/4	Aug
Ampicillin	–	1-8	–	0.12-8	–	1-8	2-8	0.25, 4-8	0.25, 4-8	0.25, 8	4-8	2-8	Am
Ampicillin/Sulbactam	–	–	8/4-16/8	–	–	–	8/4-16/8	–	–	–	–	–	A/S
Arbekacin	–	–	4-8	–	–	–	–	–	–	–	–	–	Abk
Aztreomycin	–	–	2-4	–	–	–	–	–	2-4	–	–	1-2	Azi
Cefazolin	–	–	8-16	–	–	–	–	–	–	–	–	–	Cfz
Cefotaxime	–	–	–	0.5, 16	–	–	–	–	–	–	–	–	Cft
Cefoxitin Screen	4	4	4	–	4	4	4	4	4	4	4	4	CfxS
Ceftaroline	–	–	–	–	–	–	–	0.5-1	–	–	–	–	Cpt
Ceftriaxone	–	–	–	–	–	–	8, 32	–	–	–	–	–	Cax
Cefuroxime	–	–	4-16	–	–	–	–	–	–	–	–	–	Crm
Cephalothin	–	–	8-16	–	–	–	–	–	–	8-16	8-16	–	Cf
Chloramphenicol	–	–	–	8-16	–	–	–	–	–	8-16	8-16	8	C
Ciprofloxacin	1-2	0.5-2	–	–	0.5-2	0.5-2	1-2	1-2	1-2	1-2	1-2	0.5-1	Cp
Clarithromycin	–	–	2-4	–	–	–	–	–	–	2-4	1-2	–	Cla
Clindamycin	0.25-2	0.25-2	0.25-0.5, 2	0.25-2	0.25-2	0.25-2	0.25-0.5, 2-4	0.25-2	0.25-0.5, 2	0.25-0.5, 2	0.25-0.5, 2	0.25-0.5, 2	Cd
Daptomycin	1-4	0.5-4	1, 4	–	0.5-4	0.25-4	0.5-4	1-4	1-4	1, 4	1, 4	1-4	Dap
Erythromycin	0.5-4	0.25-4	0.5-4	0.25-4	0.5-4	0.25-4	0.5-4	0.5-4	0.5-4	0.5, 4	1-2	1-2	E
Fosfomycin	32-64	32-64	–	–	32-64	32-64	–	32-64	32	32	32	32	Fos
Fusidic Acid	2, 16	–	2, 16	–	2, 16	–	–	–	2, 16	2, 16	2, 16	2	FA
Gentamicin	1, 4-8	1, 4-8	4-8	–	1-4	1-2	1-8	1, 4-8	1, 4-8	4-8	1-2	1-4	Gm
Gentamicin Synergy Screen	–	500	500	500	–	500	500	500	500	500	500	500	GmS
Imipenem	–	–	–	1-2	–	–	–	–	4-8	–	–	2-8	Imp
Inducible Clindamycin Test	4/0.5	4/0.5	4/0.5	–	4/0.5	4/0.5	4/0.5	4/0.5	4/0.5	4/0.5	4/0.5	4/0.5	ICd
Kanamycin Synergy Screen	–	–	–	1,000	–	–	–	–	–	–	–	–	KS
Levofloxacin	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-2	Lvx
Lincomycin	–	–	–	1-8	–	–	–	–	–	–	–	–	Lin
Linezolid	2-4	1-4	1-4	0.5-4	1-4	1-4	2-4	2-4	2-4	2-4	2-4	2-4	Lzd
Moxifloxacin	–	–	–	0.5-2	–	–	–	–	0.5-1	0.5-1	0.5-1	0.5-1	Mxf
Mupirocin	4-8, 256	–	4-8, 256	–	4-8, 256	–	–	256	4-8, 256	–	–	4-8, 256	Mup
Netilmicin	–	–	–	–	–	–	–	–	–	8-16	2-4	–	Nt
Nitrofurantoin	32-64	32-64	32-64	64	32-64	32-64	32-64	32-64	32-64	32-64	32-64	64	Fd
Norfloxacin	–	–	–	–	–	–	–	–	–	4-8	4-8	–	Nxn
Oxacilllin	0.25-2	0.25-2	0.25, 1-2	–	0.25-2	0.25-2	0.25-2	0.25-2	0.25, 1-2	0.25, 1-2	0.25, 1-2	0.25-2	Ox
Penicillin	0.03, 0.12-0.25	0.03, 0.12-0.25, 2, 8	0.03, 0.12-0.25, 2, 8	0.03, 0.12-0.25, 2, 8	0.03, 0.12-0.25	0.03, 0.12-0.25, 2, 8	0.12-0.25, 2, 8	0.12-0.25	0.03, 0.12, 8	0.03-0.12, 8	0.03-0.12, 8	0.12-0.25, 2	P
Pristinamycin	–	–	–	1-2	–	–	–	1-2	–	–	–	–	P/T
Rifampin	0.5-2	–	–	0.5, 4, 16	0.5-2	–	1-2	–	1-2	1-2	1-2	1-2	Rif
Streptomycin Synergy Screen	–	1,000	1,000	1,000	–	1,000	1,000	1,000	1,000	1,000	1,000	1,000	StS
Synergid	–	0.5-2	–	1-4	–	1-4	0.5-2	1-4	1-2	1-2	1-4	1-4	Syn
Teicoplanin	1-16	1-16	8-16	1-8	1-8	1-8	2-16	2-16	4-16	1-16	1-8	2-8	Tei
Tetracycline	1, 4-8	1-8	4-8	1-8	1-2	1-8	2-8	1-8	4-8	2-8	1-2	1-2	Te
Tobramycin	1, 4-8	–	–	–	1-2	–	–	1, 4-8	–	–	–	–	To
Trimethoprim/ Sulfamethoxazole	1/19-4/76	1/19-4/76	–	1/19-2/38	1/19-4/76	1/19-4/76	0.5/9.5, 2/38	2/38-4/76	2/38-4/76	2/38	2/38-4/76	1/19-4/76	T/S
Vancomycin	0.5-16	1-16	0.25-16	1-8	0.5-8	0.25-8	0.25-16	1-16	0.5-16	0.5-16	0.5-8	0.5-8	Va
Total antimicrobial agents/ panel	21	17	23	18	21	17	20	22	24	26	26	25	

## Panel definitions

**Pos Combo:** Provides Gram-positive identification and susceptibility results on one panel. Drug selection provides both staphylococci and enterococci coverage, as well as urine and systemic reporting.

**Pos BP Combo:** Provides Gram-positive identification and susceptibility results on one panel. Drug selection provides both staphylococci and enterococci coverage, as well as urine and systemic reporting. Panel contains shorter dilutions around the breakpoints, allowing for a broader drug menu.

## Legend

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# FLEXIBLE IDENTIFICATION OPTIONS

**MicroScan's broad selection of identification panels ensures accurate identification of clinically significant species and supports either overnight or rapid workflow requirements.**

Conventional overnight panel identifications are based on classical biochemical substrates and can be automatically processed on the **WalkAway** and **autoSCAN-4** systems or visually interpreted. Identifications for most species are available in 16 to 18 hours. For over 35 years, **MicroScan panels have provided gold-standard bacterial identification and susceptibility testing**, confronting emerging resistance head on.

Product #	Name	Species	Type and database	Agreement to reference <sup>§</sup>
B1017-27	Neg ID Type 2	136	Fermentative and non-fermentative Gram-negative bacilli	98.3%
B1017-221	Pos ID Type 3	25	Micrococcaceae including <i>Staphylococcus</i> , <i>Micrococcus</i> (and related genera) and <i>Listeria monocytogenes</i>	99.1%
		26	Streptococcaceae, including <i>Streptococcus</i> , <i>Enterococcus</i> and related genera	99.7%

Rapid panels require processing in a WalkAway system because they use fluorogenic substrates and indicators. Identifications are available in two-and-a-half hours and require no or minimal reagents.<sup>†</sup>

Product #	Name	Species	Type and database	Agreement to reference <sup>§</sup>
B1017-110	Rapid Neg ID 3 <sup>‡</sup>	77	Fermentative, Gram-negative bacilli	98.9%
		43	Non-fermentative, Gram-negative bacilli	98.1%
B1017-165	Rapid Neg ID 4	72	Fermentative, Gram-negative bacilli	98.8%
		48	Non-fermentative, Gram-negative bacilli	97.7%
B1017-166	Rapid Pos ID 2	24	Micrococcaceae including <i>Staphylococcus</i> , <i>Micrococcus</i> (and related genera), <i>Listeria monocytogenes</i> and <i>Listeria innocua/seeligeri</i>	99.7%
		29	Streptococcaceae, including <i>Streptococcus</i> , <i>Enterococcus</i> and related genera	99.4%

## MICroSTREP panels

Panel name	MICroSTREP plus 6	MICroSTREP plus 3	MICroSTREP plus 1	
MicroScan catalog number	B1016-170	B1016-89A	B1027-201	
Therapy guidelines	CLSI or EUCAST	CLSI or EUCAST	CLSI or EUCAST	
Languages	DE, E, FR, GR, IT, PL	DE, E, ES, IT, PT	CN, DE, E, ES, FR, GR, IT, PL, PT, TR	
Antimicrobial agent	µg/mL	µg/mL	µg/mL	Abbr.
Amoxicillin/K Clavulanate	1/0.5-4/2	0.25/0.12-4/2	0.5/0.25-4/2	Aug
Ampicillin	0.06-4	0.03-8	0.06-4	Am
Azithromycin	0.12-2	0.25-4	0.25-2	Azi
Cefaclor	-	1-2, 8-16	0.5-4	Cfr
Cefepime	0.25-2	0.12-2	0.25-2	Cpe
Cefotaxime	0.25-2	0.03-8	0.25-2	Cft
Ceftriaxone	0.25-2	-	0.25-2	Cax
Cefuroxime	0.25-2	0.25-8	0.25-2	Crm
Chloramphenicol	2-8	1-8	1-16	C
Clarithromycin	0.12-2	-	-	Cla
Ciprofloxacin	-	0.06-2	-	Cp
Clindamycin	0.06-0.5	0.25-2	0.06-0.5	Cd
Daptomycin	0.25-2	-	-	Dap
Erythromycin	0.06-0.5	0.25-4	0.06-0.5	E
Gatifloxacin	-	-	0.12-2	Gat
Levofloxacin	0.5-4	-	0.25-4	Lvx
Linezolid	1-4	-	-	Lzd
Meropenem	0.25-2	0.06-4	0.06-0.5	Mer
Minocycline	0.5-2	-	-	Min
Moxifloxacin	0.25-2	-	-	Mxf
Penicillin	0.03-4	0.03-8	0.03-4	P
Pristinamycin	1-2	-	-	Prs
Rifampin	0.5-2	0.5-2	-	Rif
Tetracycline	1-4	1-4	0.5-4	Te
Trimethoprim/Sulfamethoxazole	0.25/4.75-2/38	0.25/4.75-2/38	0.25/4.75-2/38	T/S
Vancomycin	0.25-4	0.5-8	0.12-1	Va
<b>Total antimicrobial agents/panel</b>	<b>23</b>	<b>17</b>	<b>18</b>	

## Panel definitions

**MICroSTREP:** Provides susceptibility results for aerobic non-enterococcal streptococci, including *Streptococcus pneumoniae*.

## Legend

**DE:** German

**E:** English

**ES:** Spanish

**FR:** French

**GR:** Greek

**IT:** Italian

**NO:** Norwegian

**PL:** Polish

**PT:** Portuguese

**RU:** Russian

**TR:** Turkish

# BROAD MENU OF ANTIBIOTIC CONFIGURATIONS

MicroScan's portfolio of identification and antimicrobial susceptibility panels supports unique institutional or geographic needs. Laboratorians can choose from a broad menu of antibiotic configurations, choice of antimicrobial susceptibility test formats and inoculum preparation methods, and both traditional overnight or rapid identifications.

With the continued emergence of antimicrobial resistance, **Beckman Coulter's direct testing methodology provides the most accurate and sensitive method for detecting subtle changes in susceptibility results.**

**Count on MicroScan for unmatched experience, expertise and selection.**

Not available for sale in all countries. Please check with your sales representative.

## References

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\* Ceftaroline fosamil is sold under the trademark name ZINFORE™ in the European Union by the AstraZeneca group of companies.

† Tigecycline is sold under the trademark name TYGACIL® by Pfizer, Inc.

‡ Requires use of Rapid Indole reagent.

§ Internal development data

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