

MC 6.021 Aeromonas species Susceptibility Reporting

Purpose This procedure provides instruction and guidance for routine testing and selective and cascade susceptibility reporting on *Aeromonas* species.

Principal and Clinical Significance The decisions for the most appropriate antimicrobial agents to test and report are made with input from Pharmacy, Infectious Disease and the Clinical Laboratory. The goal is to provide clinically relevant information that will decrease the chance of developing antibiotic resistance, harmful effects of inappropriate antimicrobial use and avoid reporting results that could adversely affect patient care using selective and cascade reporting rules.

Policy Statements This procedure applies to Microbiologists who perform susceptibility testing.

Special Safety Precautions Microbiologists are subject to occupational risks associated with specimen handling.

- [Biohazard Containment](#)
- [Biohazardous Spills](#)
- [Safety in the Microbiology Laboratory](#)

Procedure

1. *Aeromonas* species include:
 - *Aeromonas caviae* complex
 - *Aeromonas hydrophila* complex
 - *Aeromonas veronii* complex
 - *Aeromonas salmonicida*
 - *Aeromonas sobria*
2. Antibiotics appropriate for routine testing and reporting for *Aeromonas* species include:
 - Ceftriaxone
 - Ciprofloxacin
 - Trimethoprim Sulfamethoxazole
 - Piperacillin Tazobactam
 - Meropenem
 - Ceftazidime
 - Cefepime
 - Gentamicin
 - Levofloxacin
 - Ertapenem
 - Imipenem
 - Aztreonam
3. Perform susceptibilities using Vitek cards N806, MicroScan NUC101 or Kirby Bauer Method.
4. Not all antibiotics are available on every panel.
 - Vitek AST-N806 will be the primary method of testing.
 - MicroScan and Kirby Bauer are back up if testing fails.
 - Do not perform testing on multiple methods to cover all the antibiotics. It is acceptable if cascaded antibiotics are not reported.
5. Vitek results will be accepted under the Online Results tab. Modifications will be under the **VITMIC** keyboard under the Susceptibility tab.

6. MicroScan and Kirby Bauer results will be entered manually under the **MMIC** and **KB** keyboards respectively under the Susceptibility tab.

Selective Reporting

1. Antibiotics will be reported in a specific order indicating the first and subsequent preferences of the Antimicrobial Stewardship Committee and Infectious Disease physicians.
2. Antibiotics will be reported depending on the source, if the sample is a stool or non-stool or CSF source.
3. For **stool sources**, these 3 antibiotics will be reported routinely, in this order.
 1. Ceftriaxone
 2. Ciprofloxacin
 3. Trimethoprim-Sulfa

Figure 1 -Only CAX, CP and TS are reported. All other antibiotics are in HIDE.

Organism #1 - AEROMONAS CAVIAE		
- VITMIC -		
SS	CAX(1),CP(1),TS(40)	
HIDE	PIPT(16-SS),MERO(1-SS),CAZ(2-SS),CEFE(2-SS),GM(4-SS),LEVO(2-SS)	

4. For **non-stool sources**, these 4 antibiotics will be reported routinely, in this order.
 1. Ceftriaxone
 2. Ciprofloxacin
 3. Trimethoprim-Sulfa
 4. Piperacillin Tazobactam

Figure 2-Only CAX, CP, TS and PIPT are reported. All other antibiotics are in HIDE.

Organism #1 - AEROMONAS CAVIAE		
- VITMIC -		
SS	CAX(1),CP(1),TS(40),PIPT(16)	
HIDE	MERO(1-SS),CAZ(4-SS),CEFE(2-SS),GM(16-R),LEVO(2-SS)	

5. For **CSF** sources, only 3 antibiotics will be reported routinely, in this order.
 1. Ceftriaxone
 2. Trimethoprim-Sulfa
 3. Meropenem

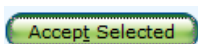
Figure 3 Only CAX, TS and Mero are reported. All other antibiotics are in HIDE.

Organism #1 - AEROMONAS CAVIAE		
- VITMIC -		
SS	CAX(1),TS(40),MERO(1)	
HIDE	PIPT(16-SS),CAZ(4-SS),CEFE(2-SS),GM(4-SS),CP(1-SS),LEVO(2-SS)	

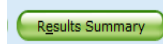
Cascade Reporting- Vitek Method

If resistance is encountered, additional antibiotics will automatically be released.

1. For Vitek method, hidden antibiotics will be released when Accept Selected is clicked.



The released results will be visible in Results Summary.



2. Results can be edited under the **VITMIC** keyboard but is not needed to report the cascaded antibiotics.
3. There are no cascade rules for stool ad CSF sources.

Method: Vitek -non-stool source

- If Ceftriaxone is R → report Meropenem
- If Piperacillin Tazobactam is R→ report Meropenem

Figure 4-Meropenem released from HIDE due to resistance.

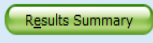
Organism #1 - AEROMONAS CAVIAE	
- VITMIC -	
SS	CP(1), TS(40), PIPT(16), MERO(1)
R	CAX(4)
HIDE	CAZ(4-SS), CEFE(2-SS), GM(16-R), LEVO(2-SS)

Organism #2 - AEROMONAS HYDROPHILA	
- VITMIC -	
SS	CAX(1), CP(1), TS(40), MERO(1)
R	PIPT(128)
HIDE	CAZ(4-SS), CEFE(2-SS), GM(4-SS), LEVO(2-SS)

- All other antibiotics on the AST-N806 panel that are not part of the cascade are hidden. Do not release and report. Hidden antibiotics include:
 - Ceftazidime
 - Cefepime
 - Gentamicin
 - Levofloxacin
- Additional antibiotics may be released with a provider request.

Cascade Reporting- MicroScan Method

If resistance is encountered, additional antibiotics will automatically be released.

- Enter **all** results manually under the **MMIC** keyboard. Antibiotics will be released following the cascade rules.
- For MicroScan method, hidden antibiotics will be released when File  is clicked.
Results will be visible in Results Summary. 
- There are no cascade rules for stool and CSF sources.

Method: MicroScan – non-stool source

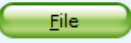
- If Ceftriaxone is R → report Meropenem
 - If Piperacillin Tazobactam is R→ report Meropenem
- It will appear as the results are hidden but Sunquest will release from HIDE automatically after results are filed. 

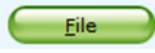
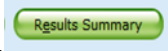
Figure 5- Meropenem released from HIDE due to resistance

Organism #1 - AEROMONAS CAVIAE		
- MMIC - (ZZ00)		
SS	CP(1), TS(40), PIPT(16), MERO(1)	
R	CAX(4)	
HIDE	CAZ(4-SS), CEFE(2-SS), GM(4-SS), LEVO(2-SS)	

- All other antibiotics on the panel that are not part of the cascade are hidden. Do not release and report. Hidden antibiotics include:
 - Ceftazidime
 - Cefepime
 - Gentamicin
 - Levofloxacin
 - Aztreonam
- Additional antibiotics may be released with a provider request.

Cascade Reporting- Kirby Bauer Method

If resistance is encountered, additional antibiotics will automatically be released.

- Enter **all** results manually under the **KB** keyboard. Antibiotics will be released following the cascade rules.
- For Kirby Bauer method, hidden antibiotics will be released when File  is clicked. The released Results will be visible in Results Summary. 

Method: Kirby Bauer – non-stool source

- If Ceftriaxone is R → report Meropenem
- If Piperacillin Tazobactam is R → report Meropenem

Figure 6 -CAX resistance, Meropenem reported

Organism #3 - AEROMONAS SPECIES		
- KB -		
SS	CP(21), TS(16), PIPT(21), MERO(23)	
R	CAX(19)	
HIDE	GM(15-SS), CAZ(21-SS), CEFE(18-R), IMP(19-R), LEVO(17-SS)	

- Stool and CSF do not have any cascade rules.
- All other antibiotics on the panel that are not part of the cascade are hidden. Do not release and report.
 - Ceftazidime
 - Cefepime
 - Gentamicin
 - Levofloxacin
 - Imipenem
- Requested antibiotics may be released with a provider request.

Method Performance Specifications

- Usually, only the Vitek card AST-N806 will be required for testing *Aeromonas* species.
- If testing by Kirby Bauer method, use the NF KB dispenser.

Vitek Product Limitations

Results for an antibiotic/organism combination may have limitations and may be suppressed from reporting. Refer to table below for specific limitations.

AST-N806 card for Aeromonas species

Antibiotic	Product Limitations
Cefepime	Cefepime will be suppressed when resistant.
Ceftazidime	Ceftazidime will be suppressed when resistant.
Ertapenem	Ertapenem will be suppressed when resistant.
Meropenem	Perform an alternative method when Meropenem is resistant.

Appendix

Additional Tables and Flowcharts

Vitek

Aeromonas- Stool	
Drugs that are reported- Stool	
Sunquest code	Drug Name
CAX	Ceftriaxone
CP	Ciprofloxacin
TS	Trimethaprim/ Sulfamethoxazole
Hidden drugs	
PIPT	Piperacillin-Tazobactam
MERO	Meropenem
CAZ	Ceftazidime
CEFE	Cefepime
GM	Gentamicin
LEVO	Levofloxacin

Aeromonas- Non-Stool	
Drugs that are reported- Non-Stool	
Sunquest code	Drug Name
CAX	Ceftriaxone
CP	Ciprofloxacin
TS	Trimethaprim/ Sulfamethoxazole
PIPT	Piperacillin-Tazobactam
Hidden drugs	
MERO	Meropenem
CAZ	Ceftazidime
CEFE	Cefepime
GM	Gentamicin
LEVO	Levofloxacin

If Ceftriaxone R

Report Meropenem

MERO

If Pip/Taz R

Report Meropenem

MERO

Aeromonas- CSF	
Drugs that are reported- CSF	
Sunquest code	Drug Name
CAX	Ceftriaxone
TS	Trimethaprim/ Sulfamethoxazole
MERO	Meropenem
Hidden drugs	
PIPT	Piperacillin-Tazobactam
CAZ	Ceftazidime
CEFE	Cefepime
GM	Gentamicin
CP	Ciprofloxacin
LEVO	Levofloxacin

MicroScan

Aeromonas- Stool		
Drugs that are reported- Stool		
MicroScan(Abbrev.)	Sunquest code	Drug Name
Cax	CAX	Ceftriaxone
Cp	CP	Ciprofloxacin
T/S	TS	Trimethaprim/ Sulfamethoxazole
Hidden drugs		
P/T	PIPT	Piperacillin-Tazobactam
Mer	MERO	Meropenem
Caz	CAZ	Ceftazidime
Cpe	CEFE	Cefepime
Gm	GM	Gentamicin
Lvx	LEVO	Levofloxacin

Aeromonas- Non-Stool		
Drugs that are reported- Non-Stool		
MicroScan(Abbrev.)	Sunquest code	Drug Name
Cax	CAX	Ceftriaxone
Cp	CP	Ciprofloxacin
T/S	TS	Trimethaprim/ Sulfamethoxazole
P/T	PIPT	Piperacillin-Tazobactam
Hidden drugs		
Mer	MERO	Meropenem
CAZ	CAZ	Ceftazidime
Cpe	CEFE	Cefepime
Gm	GM	Gentamicin
Azt	AZTR	Aztreonam
Lvx	LEVO	Levofloxacin

If Ceftriaxone R
Report Meropenem MERO

If Pip/Taz R
Report Meropenem MERO

Aeromonas- CSF		
Drugs that are reported- CSF		
MicroScan(Abbrev.)	Sunquest code	Drug Name
Cax	CAX	Ceftriaxone
T/S	TS	Trimethaprim/ Sulfamethoxazole
Mer	MERO	Meropenem
Hidden drugs		
CAZ	CAZ	Ceftazidime
Cpe	CEFE	Cefepime
Gm	GM	Gentamicin
Cp	CP	Ciprofloxacin
Lvx	LEVO	Levofloxacin
P/T	PIPT	Piperacillin-Tazobactam

Kirby-Bauer- NF Dispenser

Aeromonas- Stool		
Drugs that are reported- Stool		
MicroScan(Abbrev.)	Sunquest code	Drug Name
CRO	CAX	Ceftriaxone
CIP	CP	Ciprofloxacin
SXT	TS	Trimethaprim/ Sulfamethoxazole

Aeromonas- Non-Stool		
Drugs that are reported- Non-Stool		
MicroScan(Abbrev.)	Sunquest code	Drug Name
CRO	CAX	Ceftriaxone
Cp	CP	Ciprofloxacin
SXT	TS	Trimethaprim/ Sulfamethoxazole
TZP	PIPT	Piperacillin-Tazobactam
Hidden drugs		
Mer	MERO	Meropenem
GM	GM	Gentamicin
CAZ	CAZ	Ceftazidime
Fep	CEFE	Cefepime
IMP	IMP	Imipenem
Lvx	LEVO	Levofloxacin

If Ceftriaxone R
Report Meropenem MERO

If Pip/Taz R
Report Meropenem MERO

Aeromonas- CSF		
Drugs that are reported- CSF		
MicroScan(Abbrev.)	Sunquest code	Drug Name
Cax	CAX	Ceftriaxone
Mer	MERO	Meropenem
T/S	TS	Trimethaprim/ Sulfamethoxazole
Hidden drugs		
CAZ	CAZ	Ceftazidime
Cpe	CEFE	Cefepime
Gm	GM	Gentamicin
IMP	IMP	Imipenem
Lvx	LEVO	Levofloxacin
P/T	PIPT	Piperacillin-Tazobactam
Cp	CP	Ciprofloxacin

References

1. bioMerieux Vitek 2 AST-N806 Gram Negative Susceptibility Card 424709 2023-07
2. Beckman Coulter Diagnostics. 250 South Kraemer Boulevard. Brea, CA 92821-6232 USA, MicroScan® Dried Gram Negative (8/2022).
3. CLSI M100 edition 35 Performance Standards for Antimicrobial Susceptibility Testing 2025

Training Plan/ Competency Assessment

Training Plan	Initial Competency Assessment
1. Employee must read the procedure. 2. Employee will observe trainer performing the procedure. 3. Employee will demonstrate the ability to perform procedure, record results and document corrective action after instruction by the trainer.	1. Direct observation.

Historical Record

Version	Written/Revised by:	Effective Date:	Summary of Revisions
1	Susan DeMeyere	4/22/2025	Initial version