

Staphylococcus lugdunensis (LTR81526)

Edit Approved By: Van der Walt, Peet (09/27/2023)

Revision: 6.00

Organism **Staphylococcus lugdunensis**

Clinical This organism may colonize the skin preferentially the perineal area. It has been associated with bacteremia, skin and soft tissue infections, ocular infections, peritonitis, bone and joint infection prosthetic material related infections, and native and prosthetic endocarditis. Virulence of this organism resembles that of *S. aureus*. In endocarditis, antimicrobial therapy alone is often not sufficient (surgical intervention usually required).

Usual susceptibility pattern Susceptibility to penicillin and clindamycin is variable. *S. lugdunensis* is usually susceptible to oxacillin/cloxacillin, tetracyclines, TMP-SMX, vancomycin and linezolid. Vancomycin tolerance has been recognized among *S. lugdunensis* isolates.

Susceptibility method VITEK2. Additional tests include disc diffusion and Etest method.

Disc diffusion		Mueller-Hinton agar incubated in ambient air at 35°C for 16-18 hours
Cefoxitin Screen disc		Mueller-Hinton agar incubated in ambient air at 35°C for 16-18 hours. Use 0.5 McFarland suspension in saline.
Etest	Oxacillin/ Cloxacillin	Mueller-Hinton agar with 2% NaCl incubated in ambient air at 35°C for 48 hours. Use 1.0 McFarland suspension in saline.
	Vancomycin	Mueller-Hinton agar incubated in ambient air at 35°C for 24 hours. Use 0.5 McFarland suspension in saline.
	Other	Mueller-Hinton agar incubated in ambient air at 35°C for 16-20 hours. Use 0.5 McFarland suspension in saline.

Staphylococcus lugdunensis, Continued

Susceptibility reporting

	CSF/ Brain	Blood/ Endo vascular Catheter	Sterile Body Site	PJI (see Note)	Wound	Urine	Comments
Amoxicillin/ clavulanate (oral)					*		* Report (same as ox/clox) if <i>Haemophilus/ Moraxella / S. pneumoniae/ Amp S Enterococci</i> or anaerobes co- isolated
Cefazolin		✓	✓	✓	✓	✓	Report same as ox/clox
Clindamycin			✓	✓	✓		See Special Considerations
Doxycycline			✓	✓	✓	✓	If tetra S - report doxy S If tetra I/R - do doxy disc Do not report if patient <8 y
Erythromycin			*	*	*		*Test but do not report - see Special Considerations
Levofloxacin				✓			
Linezolid	2	2	2	2			2 nd line if ox/clox R If linezolid R see Special Considerations
Nitrofurantoin						✓	
Oxacillin/ Cloxacillin	✓	✓	✓	✓	✓	✓	Refer to Staphylococcus Oxacillin Reporting Flowchart (Doc ID: MIC - 37934)
Rifampin				✓			
TMP-SMX			✓	✓	✓	✓	Do not report if patient <2 months
Vancomycin	2	2	2	2	2	2	2 nd line if ox/clox R If vanco ≥4 µg/mL see Special Considerations

Note

Prosthetic joint infections (PJI)	For significant <i>Staphylococcus</i> sp. isolated from joint fluids with prosthetic joint/implant associated infections (PJI), joint tissues, or foreign bodies from joints. Refer to Staphylococcus spp. Doxycycline, Levofloxacin, SXT and Rifampin Reporting Flowchart (Doc ID: MIC – 14945).
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Special considerations

<p><u>Clindamycin/ Erythromycin:</u></p>	<p>If clindamycin S/I and erythromycin I/R this may indicate inducible resistance.</p> <table border="1" data-bbox="397 348 1377 615"> <thead> <tr> <th data-bbox="397 348 753 384">IF...</th> <th data-bbox="753 348 1377 384">THEN....</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 384 753 573">VITEK2 ICR is positive</td> <td data-bbox="753 384 1377 573"> <ul style="list-style-type: none"> Report clindamycin R Add comment: "This isolate is presumed to be resistant to clindamycin based on the detection of inducible clindamycin resistance in vitro" #A139 </td> </tr> <tr> <td data-bbox="397 573 753 615">VITEK2 ICR is negative</td> <td data-bbox="753 573 1377 615"> <ul style="list-style-type: none"> Report clindamycin as tested </td> </tr> </tbody> </table>	IF...	THEN....	VITEK2 ICR is positive	<ul style="list-style-type: none"> Report clindamycin R Add comment: "This isolate is presumed to be resistant to clindamycin based on the detection of inducible clindamycin resistance in vitro" #A139 	VITEK2 ICR is negative	<ul style="list-style-type: none"> Report clindamycin as tested 		
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<p><u>Linezolid:</u></p>	<p><i>S. lugdunensis</i> should be susceptible to this antibiotic.</p> <ul style="list-style-type: none"> If VITEK2 linezolid R confirm with disc diffusion If linezolid S by disc diffusion report linezolid S and add comment: "Current testing methods may not detect resistance. Infectious diseases consultation is recommended if clinical failure or delayed response to therapy." (free text) Consult microbiologist if confirmed as R. 								
<p><u>Vancomycin:</u></p>	<p>Isolates with VITEK2 MIC ≥ 4 $\mu\text{g/mL}$, confirm MIC by Etest and consult microbiologist.</p> <table border="1" data-bbox="397 982 1409 1896"> <thead> <tr> <th data-bbox="397 982 711 1018">IF vancomycin is...</th> <th data-bbox="711 982 1409 1018">THEN....</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 1018 711 1346"> 4 $\mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="711 1018 1409 1346"> <ul style="list-style-type: none"> The clinical failure rate of vancomycin may be significant. Consult Microbiologist Add comment: "This isolate tests at the upper limit of susceptibility to vancomycin. Careful follow up to assess clinical response is required, or an alternate agent should be considered. Expert consultation is suggested." #va04 </td> </tr> <tr> <td data-bbox="397 1346 711 1528"> 8-16 $\mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="711 1346 1409 1528"> <ul style="list-style-type: none"> Consult Microbiologist Report vancomycin as I Add comment: "This isolate exhibits resistance to vancomycin." #va11 Notify Infection Control & MOH </td> </tr> <tr> <td data-bbox="397 1528 711 1896"> ≥ 32 $\mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="711 1528 1409 1896"> <ul style="list-style-type: none"> Consult Microbiologist Report vancomycin as R Add comments: "Preliminary tests indicate this organism may be resistant to vancomycin" #va12 "Referred to Public Health Laboratory, Alberta Precision Laboratories. for Van gene testing." #va13 Notify Infection Control & MOH Send to reference laboratory for Van gene testing. </td> </tr> </tbody> </table>	IF vancomycin is...	THEN....	4 $\mu\text{g/mL}$ (confirmed by Etest)	<ul style="list-style-type: none"> The clinical failure rate of vancomycin may be significant. Consult Microbiologist Add comment: "This isolate tests at the upper limit of susceptibility to vancomycin. Careful follow up to assess clinical response is required, or an alternate agent should be considered. Expert consultation is suggested." #va04 	8-16 $\mu\text{g/mL}$ (confirmed by Etest)	<ul style="list-style-type: none"> Consult Microbiologist Report vancomycin as I Add comment: "This isolate exhibits resistance to vancomycin." #va11 Notify Infection Control & MOH 	≥ 32 $\mu\text{g/mL}$ (confirmed by Etest)	<ul style="list-style-type: none"> Consult Microbiologist Report vancomycin as R Add comments: "Preliminary tests indicate this organism may be resistant to vancomycin" #va12 "Referred to Public Health Laboratory, Alberta Precision Laboratories. for Van gene testing." #va13 Notify Infection Control & MOH Send to reference laboratory for Van gene testing.
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Interpretation For Etest, report actual MIC result. For interpretation (S, I, or R) report according to the nearest higher doubling dilution (**Appendix 1**).

Use **CLSI** interpretive document for **Staphylococcus spp.**

For oxacillin and ceftioxin: Refer to *Staphylococcus Oxacillin Reporting Flowchart* (Doc ID: MIC - 37934)