

Staphylococcus intermedius-pseudintermedius S. delphini (LTR81525)

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

Revision: 7.00

Organism *Staphylococcus intermedius / pseudintermedius*
Staphylococcus delphini

Clinical These organisms are zoonotic pathogens found in a variety of wild and domestic animals.
S. intermedius / pseudintermedius occasionally cause disease in humans, sometimes due to transmission by dogs or other pets. *S. intermedius* has been identified in skin and soft tissue infections and 1 case of meningitis. *S. pseudintermedius* is predominantly a pathogen of skin and soft tissue but also causes invasive disease. *S. pseudintermedius* appears to be a more common human pathogen than *S. intermedius*. Studies have shown that these isolates rarely colonize humans. Not all infections have been linked to animal exposure and some studies have suggested diabetes may be a risk factor. *S. delphini* has been described in one case of soft tissue infection in a human.

Usual susceptibility pattern Although these organisms have generally been considered to be susceptible to oxacillin, increasing resistance has been noted in *S. pseudintermedius*. Neither ceftiofur MIC nor disc tests are reliable for detecting the presence of the *mecA* gene for *S. pseudintermedius*. Resistance to doxycycline, clindamycin, ciprofloxacin, erythromycin and SXT is more common in methicillin resistant *S. pseudintermedius*.

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
Etest	Oxacillin	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 intermedius/pseudintermedius S. delphini, 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 <i>Staphylococcus Oxacillin Reporting Flowchart (Doc ID: MIC - 37934)</i>
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

Notes

All sites	For isolates where susceptibility results are reported, add comment: "This organism is usually of animal origin and has similar pathogenicity as <i>Staphylococcus aureus</i> ." &Sta1
Prosthetic joint infections (PJI)	For significant <i>Staphylococcus, sp.</i> isolated from joint fluids with prosthetic joint/implant associated infections (PJI), joint tissues, or foreign bodies from joints. Refer to <i>Staphylococcus spp. Doxycycline, Levofloxacin, SXT and Rifampin Reporting Flowchart</i> (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="456 321 1435 585"> <thead> <tr> <th data-bbox="456 321 813 359">IF...</th> <th data-bbox="813 321 1435 359">THEN....</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 359 813 548">VITEK2 ICR is positive</td> <td data-bbox="813 359 1435 548"> <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="456 548 813 585">VITEK2 ICR is negative</td> <td data-bbox="813 548 1435 585"> <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>S. intermedius / pseudintermedius are usually 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 $\geq 4 \mu\text{g/mL}$, confirm MIC by Etest and consult Supervisor</p> <table border="1" data-bbox="456 947 1468 1856"> <thead> <tr> <th data-bbox="456 947 776 984">IF vancomycin is...</th> <th data-bbox="776 947 1468 984">THEN....</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 984 776 1308"> 4 $\mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="776 984 1468 1308"> <ul style="list-style-type: none"> The clinical failure rate of vancomycin may be significant. Consult Supervisor 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="456 1308 776 1493"> 8-16 $\mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="776 1308 1468 1493"> <ul style="list-style-type: none"> Consult Supervisor Report vancomycin as I Add comment: "This isolate exhibits resistance to vancomycin." #va11 </td> </tr> <tr> <td data-bbox="456 1493 776 1856"> $\geq 32 \mu\text{g/mL}$ (confirmed by Etest) </td> <td data-bbox="776 1493 1468 1856"> <ul style="list-style-type: none"> Consult Supervisor 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 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 Supervisor 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 Supervisor Report vancomycin as I Add comment: "This isolate exhibits resistance to vancomycin." #va11 	$\geq 32 \mu\text{g/mL}$ (confirmed by Etest)	<ul style="list-style-type: none"> Consult Supervisor 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 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: Refer to *Staphylococcus Oxacillin Reporting Flowchart* (Doc ID: MIC - 37934)