

Streptococcus Groups C and G (LTR70541)

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Revision: 4.00

Organism
Streptococcus Groups C and G

- *S. dysgalactiae* subsp. *equisimilis* (C,G)
- *S. dysgalactiae* subsp. *dysgalactiae* (C)
- *S. equi* subsp. *equi* (C)
- *S. equi* subsp. *ruminatorum* (C)
- *S. equi* subsp. *zooepidemicus* (C)
- *S. canis* (G)

Clinical

These organisms are part of the normal flora of the oropharynx and of the gastrointestinal tract and can temporarily colonize the skin. They have been associated with a variety of infections (neonatal and postpartum infections, bacteremia, endocarditis, meningitis, arthritis, osteomyelitis, pneumonia), usually in predisposed individuals (immunosuppression, malignancy [especially group G], diabetes, chronic cardiopulmonary disease, alcoholism). Group C may also be associated with animal exposure. Both group C and G Streptococci may cause pharyngitis and skin infection clinically resembling infections by *Streptococcus pyogenes*.

Usual susceptibility pattern

These organisms are susceptible to penicillin, cephalosporins, and vancomycin. Resistance to macrolides and clindamycin is significant (more clindamycin resistance in Group G). Antimicrobial tolerance to penicillin has been described and in serious infections, synergistic combination therapy with gentamicin has been recommended. Tolerance to vancomycin has also been described in Group G Streptococci.

Susceptibility method

VITEK2. Additional tests (disc diffusion or Etest method) using Mueller-Hinton agar with 5% sheep blood incubated in 5% CO₂ at 35°C for 20-24 hours.

Note: For Etest, use 0.5 McFarland suspension in broth.
For mucoid strains use 1.0 McFarland.

Streptococcus Groups C and G, Continued

Susceptibility reporting

	CSF/ Brain	Blood	Sterile Body Site	Throat	Urine	Other	Comments
Amoxicillin					✓		Report same as penicillin
Ampicillin					✓		If amp nonsusceptible see Special Considerations
Cefazolin		✓	✓			✓	Report same as penicillin
Cefotaxime	*	*	*				*Report if patient ≤3 months If cefotaxime nonsusceptible see Special Considerations
Ceftriaxone	✓	✓	✓				Do not report if patient ≤1 month If ceftriaxone nonsusceptible see Special Considerations
Cephalexin				✓	✓		Report same as penicillin
Clindamycin			✓	✓		✓	See Special Considerations
Erythromycin			*	✓**		*	* Test but do not report ** See Special Considerations
Levofloxacin					✓		Do not report if patient <18 y
Penicillin	✓	✓	✓	✓		✓	If penicillin nonsusceptible see Special Considerations
Tetracycline				2			2 nd line if clinda I/R Do not report if patient < 8 y
Vancomycin	✓	✓	✓			2	2 nd line if co-isolated with MRSA If vanco nonsusceptible see Special Considerations

Note

Blood cultures	Perform susceptibility testing according to reporting chart: Additional Comments: <ul style="list-style-type: none"> Add comment &A220 “If patient has an endovascular infection or is immunocompromised, combination therapy with gentamicin should be considered.”
Sterile body sites	Perform susceptibility testing according to reporting chart

Streptococcus Groups C and G, Continued

Note (continued)

Deep wound specimens	IF ...	THEN ...
	<ul style="list-style-type: none"> cellulitis or fasciitis isolate is pure history of penicillin / β lactam allergy co-isolation of MRSA failure of therapy clindamycin therapy indicated at physician request 	Perform susceptibility testing according to reporting chart
	None of the above	Add comment &Str1
Throat	IF ...	THEN ...
	<ul style="list-style-type: none"> history of penicillin / β lactam allergy recurrent pharyngitis/tonsillitis current therapy or failure of therapy with erythromycin, clarithromycin, azithromycin or clindamycin at physician request 	Perform susceptibility testing according to reporting chart
	None of the above	Add comment 21090
Urine	IF significant urine isolate and ...	THEN ...
	<ul style="list-style-type: none"> history of penicillin / β lactam allergy at physician request 	Perform susceptibility testing according to reporting chart
	None of the above	Add comments &2162
Other specimen sources	Refer to specific bench protocols for susceptibility testing requirements.	
	<ul style="list-style-type: none"> If indicated in bench protocol add comment &Str1 	

LIS Code...	Translation...
&Str1	Antibiotic susceptibility testing is not routinely performed. This organism is predictably susceptible to penicillin and other beta-lactam antibiotics. Susceptibility to clindamycin is variable.
	Antibiotic susceptibility testing is not routinely performed. This organism is predictably susceptible to penicillin and other beta-lactam antibiotics. Susceptibility to erythromycin and clindamycin is variable.
&2162	This organism is generally susceptible to beta lactam antibiotics.

Streptococcus Groups C and G, Continued

Special considerations

<p><u>Ampicillin/</u> <u>Penicillin/</u> <u>Vancomycin:</u></p>	<p>Streptococcus Groups C and G should be susceptible to these antibiotics. Consult Supervisor if not susceptible. If 'nonsusceptible', the organism ID and susceptibility should be confirmed by repeat testing. If confirmed, consider submitting isolate to a reference laboratory.</p>						
<p><u>Cefotaxime/</u> <u>Ceftriaxone:</u></p>	<p>Streptococcus Groups C and G should be susceptible to these antibiotics. Consult Supervisor if not susceptible. If 'nonsusceptible', the organism ID and susceptibility should be confirmed by repeat testing. If confirmed, consider submitting isolate to a reference laboratory.</p> <p>If patient ≤1 month report cefotaxime only. If patient >1-3 months report cefotaxime and ceftriaxone. If patient >3 months report ceftriaxone only.</p>						
<p><u>Clindamycin:</u></p>	<p>If clindamycin S/I and erythromycin I/R this may indicate inducible resistance. Check for inducible resistance with D test. Refer to <i>D Test for the Detection of Inducible Clindamycin Resistance</i> (Doc ID: MIC - 8140)</p> <table border="1" data-bbox="386 1003 1351 1283"> <thead> <tr> <th data-bbox="386 1003 740 1041">IF...</th> <th data-bbox="745 1003 1351 1041">THEN...</th> </tr> </thead> <tbody> <tr> <td data-bbox="386 1047 740 1241">D test is positive</td> <td data-bbox="745 1047 1351 1241"> <ul style="list-style-type: none"> Report clindamycin R Add comment: "This isolate is presumed to be resistant to clindamycin based on detection of inducible clindamycin resistance." #A139 </td> </tr> <tr> <td data-bbox="386 1247 740 1283">D test is negative</td> <td data-bbox="745 1247 1351 1283"> <ul style="list-style-type: none"> Report clindamycin as tested </td> </tr> </tbody> </table> <p>If clindamycin I/R and erythromycin S confirm results. This may represent a rare mechanism of resistance.</p> <ul style="list-style-type: none"> Confirm clindamycin and erythromycin by disc diffusion and D test. If VITEK2 results confirmed report as tested. If discrepancy between VITEK2 and disc diffusion results consult Supervisor 	IF...	THEN...	D test is positive	<ul style="list-style-type: none"> Report clindamycin R Add comment: "This isolate is presumed to be resistant to clindamycin based on detection of inducible clindamycin resistance." #A139 	D test is negative	<ul style="list-style-type: none"> Report clindamycin as tested
IF...	THEN...						
D test is positive	<ul style="list-style-type: none"> Report clindamycin R Add comment: "This isolate is presumed to be resistant to clindamycin based on detection of inducible clindamycin resistance." #A139 						
D test is negative	<ul style="list-style-type: none"> Report clindamycin as tested 						
<p><u>Erythromycin:</u></p>	<p>For throat isolates:</p> <ul style="list-style-type: none"> Add comment: "Erythromycin susceptibility result applicable to azithromycin and clarithromycin" (23355) 						

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 ***Streptococcus spp.* β-Hemolytic Group**