

# ANTIBIOGRAM

Clinical Microbiology Laboratory  
University of Minnesota Medical Center, Fairview  
April 2008

Printed herein are the latest cumulative antibiotic susceptibility results from University of Minnesota Medical Center, Fairview from January 1, 2007-December 31, 2007 except where noted otherwise. These data should provide some guidelines in selecting the appropriate antibiotics for your patient. Data are for bacteria isolated from diverse sources, including bloods.

Results listed are based on the Vitek™ Automated Microbiology System or a microdilution minimum inhibitory concentration (MIC) procedure. Anaerobic susceptibility results are based on the Etest® method.

The figures listed indicate the percentages of organisms that are susceptible; figures in parentheses indicate the number of strains tested.

If you have any questions or for susceptibilities of infrequently isolated organisms, please call the laboratory at (612) 273-3665.

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# ANTIBIOGRAM - ANAEROBIC BACTERIA

(Etest® method or by MIC panel)

Clinical Microbiology Laboratory, University of Minnesota Medical Center, Fairview

	Actinomyces species 1999-07	Bacteroides fragilis group* 1999-07	Bacteroides fragilis species 1999-07	Prevotella, Porphyromonas, Bact. sp.- (not frag.)** 1999-07	Clostridium perfringens 1999-07	Clostridium sp., not perfringens 1999-07	Capnocytophaga 1999-07
Cefotaxime	100% (14)	29% (17)	62% (8)	100% (78)	100% (20)	NT	NT
Chloramphenicol	100% (11)	95% (59)	100% (19)	100% (21)	100% (20)	94% (16)	100% (20)
Clindamycin	82% (34)	NT	NT	77% (26)	83% (40)	65% (48)	90% (20)
Metronidazole	33% (27)	98% (66)	93% (29)	100% (32)	98% (40)	100% (48)	70% (20)
Penicillin	91% (34)	NT	NT	55% (22)	81% (41)	66% (47)	76% (21)
Ampicillin/ Sulbactam	NT	NT	NT	NT	NT	100% (43)	100% (20)
Meropenem	NT	NT	NT	NT	100% (4)	NT	100% (1)
Imipenem	100% (13)	100% (61)	100% (28)	100% (33)	NT	100% (21)	100% (6)
Piperacillin/ Tazobactam	NT	95% (19)	100% (8)	100% (8)	NT	NT	NT

	Fusobacterium species 1999-07	Propioni- bacterium species 1999-07	Anaerobic gram-positive cocci (not Strep species) 1999-07	Strepto coccus species 1999-07	Veillonella species 1999-07
Cefotaxime	100% (10)	100% (251)	95% (39)	100% (12)	100% (1)
Chloramphenicol	100% (13)	100% (98)	100% (5)	100% (89)	100% (4)
Clindamycin	100% (24)	91% (363)	77% (56)	92% (105)	100% (5)
Metronidazole	100% (22)	NT	85% (53)	18% (94)	100% (5)
Penicillin	91% (22)	100% (391)	96% (48)	94% (124)	25% (4)
Ampicillin/ Sulbactam	NT	NT	NT	NT	NT
Meropenem	100% (1)	100% (80)	100% (7)	100% (2)	NT
Imipenem	NT	NT	NT	NT	NT
Piperacillin/ Tazobactam	NT	NT	NT	NT	NT

\* This data includes members of *Bacteroides fragilis* group excluding *Bacteroides fragilis* species. Members of the *Bacteroides fragilis* group include: *B. distasonis*, *B. ovatus*, *B. thetaiotamicron*, *B. vulgatus*, *B. uniformis*, *B. caccae*, *B. eggerthii*, *B. stercoris* and *B. splancticus*.

\*\* This data includes the *Bacteroides* species (not *fragilis* group) *Prevotella* and *Porphyromonas* genera.  
% = percent susceptible strains  
NT = not tested

## ANTIBIOGRAM - GRAM-POSITIVE BACTERIA

Clinical Microbiology Laboratory, University of Minnesota Medical Center, Fairview

	<u>Staphylococcus aureus</u>	<u>Staphylococcus aureus (MRSA)</u>	<u>Coagulase Negative Staph</u>	<u>Group D Enterococcus*</u>	<u>Enterococcus faecalis</u>	<u>Enterococcus faecium</u>	<u>Alpha Streptococcus not grp D*</u>	<u>Streptococcus group B</u>	<u>Strep pneumoniae</u>
Ampicillin	NT	NT	NT	85% (1566)	98% (50)	1% (259)	72% (103)	100% (1178)	NT
Cefotaxime	NT	NT	NT	NT	NT	NT	92% (103)	100% (1027)	90% (10)
Ceftriaxone	NT	NT	NT	NT	NT	NT	92% (101)	100% (1177)	95% (110)
Clindamycin	69% (1774)	21% (1059)	46% (1854)	NT	NT	NT	88% (100)	67% (1176)	76% (118)
Erythromycin	64% (1774)	4% (1059)	29% (1855)	NT	NT	NT	40% (91)	59% (1176)	59% (98)
9									
Gentamicin	95% (1769)	94% (1058)	69% (1854)	NT	NT	NT	NT	NT	NT
Ciprofloxacin	84% (1051)	16% (635)	38% (1102)	61% (872)	62% (37)	2% (126)	NT	NT	NT
Levofloxacin	87% (1772)	14% (1059)	37% (1855)	61% (1559)	62% (50)	1% (259)	NT	NT	99% (109)
Meropenem	NT	NT	NT	NT	NT	NT	NT	NT	85% (26)
Oxacillin**	100% (1774)	0% (1058)	29% (1856)	NT	NT	NT	NT	NT	NT
Penicillin	1% (1774)	0% (1058)	1% (1858)	85% (1565)	98% (50)	1% (259)	68% (103)	100% (1178)	61% (121)
9									
Tetracycline	94% (1768)	94% (1059)	86% (1853)	32% (1543)	22% (50)	35% (258)	NT	NT	NT
Trimeth/Sulfa	95% (1768)	95% (1054)	53% (1824)	NT	NT	NT	NT	NT	NT
Vancomycin	100% (1772)	100% (1059)	100% (1857)	90% (1759)	88% (50)	3% (259)	100% (102)	100% (1178)	100% (121)
Nitrofurantoin	99% (1729)	100% (1040)	99% (1808)	82% (1523)	100% (50)	10% (252)	NT	NT	NT
9									
Linezolid	100% (1752)	98% (1059)	100% (1824)	97% (1697)	98% (55)	94% (467)	NT	NT	NT
Synercid	100% (1748)	100% (1045)	100% (1826)	25% (1541)	0% (50)	96% (262)	NT	NT	NT

\* Data for group D nonenterococcal (streptococcal) strains are similar to alpha hemolytic *Streptococcus* not group D

\*\* Oxacillin data are representative of all semi-synthetic penicillins (nafcillin, methicillin)

% = susceptible strains; ( ) = number of strains tested; NT= not tested

## ANTIBIOGRAM - GRAM-NEGATIVE BACTERIA

Clinical Microbiology Laboratory, University Of Minnesota Medical Center, Fairview

Antibiotics	<i>Acinetobacter baumannii</i>	<i>Citrobacter freundii</i>	<i>Enterobacter aerogenes</i>	<i>Enterobacter cloacae</i>	<i>E. coli</i> ♦	<i>Klebsiella oxytoca</i> ♦	<i>Klebsiella pneumoniae</i> ♦	<i>Morganella morganii</i>	<i>Proteus mirabilis</i>	<i>Pseudomonas aeruginosa</i> *	<i>Pseudomonas aeruginosa</i> **	<i>Burkholderia cepacia</i> complex	<i>Serratia marcescens</i>	<i>Stenotrophomonas maltophilia</i>
Amikacin	100% (45)	95% (44)	98% (83)	98% (272)	99% (489)	100% (98)	100% (309)	100% (16)	100% (75)	89% (643)	35% (1477)	0% (251)	95% (121)	0% (474)
Ampicillin	2% (55)	0% (113)	0% (131)	0% (393)	53% (3318)	0% (164)	0% (824)	0% (42)	81% (284)	NT	NT	NT	0% (154)	NT
Ampicillin/ Sulbactam	77% (44)	0% (112)	0% (124)	0% (387)	77% (3262)	80% (162)	90% (811)	0% (37)	92% (274)	NT	NT	NT	0% (153)	NT
Amoxicillin/ Clavulanic acid	25% (20)	0% (114)	0% (139)	0% (378)	77% (3297)	81% (156)	90% (806)	0% (41)	91% (279)	NT	NT	NT	0% (132)	NT
Aztreonam	NT	NT	NT	NT	NT	NT	NT	NT	NT	70% (594)	35% (1477)	7% (249)	NT	4% (468)
Cefazolin	0% (55)	0% (113)	0% (131)	0% (393)	89% (3318)	55% (164)	94% (824)	0% (42)	94% (284)	NT	NT	NT	0% (153)	NT
Cefepime	78% (45)	95% (44)	100% (82)	97% (292)	96% (499)	100% (98)	97% (310)	100% (16)	100% (75)	77% (643)	47% (1477)	10% (251)	98% (120)	9% (474)
Cefotaxime	21% (58)	88% (119)	71% (142)	69% (398)	98% (3263)	99% (162)	98% (814)	89% (38)	100% (274)	13% (636)	28% (1477)	8% (250)	90% (158)	5% (474)
Cefotetan	10% (42)	9% (43)	0% (82)	0% (268)	95% (489)	100% (98)	99% (311)	94% (16)	100% (75)	NT	NT	NT	93% (120)	NT
Ceftazidime	75% (59)	87% (121)	67% (147)	67% (402)	97% (3309)	100% (164)	98% (822)	88% (42)	100% (283)	88% (644)	67% (1477)	48% (251)	95% (159)	28% (475)
Ceftriaxone	28% (57)	89% (121)	69% (148)	68% (402)	98% (3318)	98% (164)	98% (822)	90% (42)	100% (284)	NT	NT	NT	93% (158)	NT
Ciprofloxacin	81% (59)	88% (121)	93% (148)	81% (401)	81% (3316)	97% (164)	93% (824)	81% (42)	77% (284)	75% (644)	43% (1477)	14% (251)	79% (159)	14% (475)
Gentamicin	88% (59)	90% (121)	89% (147)	81% (402)	92% (3316)	99% (164)	97% (824)	90% (42)	95% (284)	78% (645)	22% (1477)	0% (251)	92% (159)	0% (474)
Imipenem	100% (49)	100% (44)	99% (83)	99% (284)	100% (518)	100% (98)	100% (314)	95% (19)	97% (67)	86% (645)	61% (1477)	22% (251)	98% (122)	0% (474)
Levofloxacin	81% (52)	91% (120)	95% (146)	85% (399)	81% (3312)	98% (164)	95% (824)	83% (42)	79% (284)	72% (643)	43% (1475)	17% (246)	85% (150)	51% (471)
Piperacillin	69% (35)	68% (44)	51% (82)	54% (270)	58% (488)	0% (98)	0% (311)	81% (16)	87% (75)	93% (644)	84% (1477)	30% (251)	81% (121)	21% (475)
Piperacillin/ Tazobactam	74% (35)	80% (25)	62% (82)	74% (274)	91% (492)	86% (98)	93% (311)	100% (16)	100% (75)	94% (645)	84% (1476)	67% (251)	83% (121)	NT

\* Non-cystic fibrosis cultures

\*\* Cystic fibrosis cultures

Gram Negative Bacteria, continued.

Antibiotics	Acinetobacter calcoaceticus	Citrobacter freundii	Enterobacter aerogenes	Enterobacter cloacae	E. coli ♦	Klebsiella oxytoca ♦	Klebsiella pneumoniae ♦	Morganella morganii	Proteus mirabilis	Pseudomonas aeruginosa*	Pseudomonas aeruginosa**	Burkholderia cepacia complex	Serratia marcescens	Stenotrophomonas maltophilia
Tetracycline	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	8% (1476)	7% (245)	NT	7% (374)
Ticarcill/ Clavulanic	82% (56)	84% (121)	62% (147)	61% (401)	86% (3315)	88% (164)	94% (824)	83% (42)	99% (284)	82% (643)	68% (1477)	11% (251)	79% (157)	46% (475)
Ticarcillin	54% (13)	82% (77)	80% (59)	62% (131)	57% (2812)	0% (66)	0% (508)	67% (42)	92% (205)	NT	NT	NT	87% (39)	NT
Tobramycin	93% (59)	93% (121)	88% (147)	80% (402)	93% (3314)	99% (164)	96% (824)	93% (42)	96% (284)	94% (643)	54% (1477)	0% (251)	81% (159)	0% (474)
Trimeth/Sulfa	97% (59)	76% (120)	88% (147)	70% (402)	72% (3316)	96% (164)	85% (824)	69% (42)	84% (283)	9% (622)	34% (1476)	36% (251)	92% (159)	88% (475)
Nitrofurantoin	8% (12)	88% (78)	5% (61)	26% (133)	95% (2826)	65% (66)	23% (515)	0% (28)	0% (209)	NT	NT	NT	0% (38)	NT

\* Non-cystic fibrosis cultures, \*\* Cystic fibrosis cultures

♦2% of the *E. coli*, 3% of the *K. pneumoniae*, and 1% of the *K. oxytoca* tested in 2007 were positive for ESBL. These statistics are for ESBL negative organisms only

% = percent susceptible strains

() = Number of strains tested

NT = not tested

**Haemophilus influenzae**

Ampicillin*	72% (139)
Amoxicillin/Clav	99% (139)
Ceftriaxone	100% (130)
Cefotaxime	100% (9)
Levofloxacin	100% (139)

\* Ampicillin resistance for *Haemophilus influenzae* type b is common nationwide. The data here do not distinguish between *H. influenzae* type b or non-type b strains.

**Yeasts/Fungi (1994 through 2007)**

	Candida albicans	Candida glabrata	Candida krusei	Candida tropicalis	Candida parapsilosis	Cryptococcus neoformans
Amphotericin B	99% (1825)	99% (569)	100% (109)	100% (237)	100% (461)	100% (108)
5-fluorocytosine	99% (1222)	98% (291)	0% (43)	93% (168)	99% (215)	91% (111)
Fluconazole	97% (1311)	43% (389)	0%*	79% (110)	96% (406)	88% (51)
Itraconazole	92% (231)	26% (171)	39% (54)	77% (30)	95% (61)	100% (11)
Voriconazole	93% (164)	78% (110)	85% (26)	89% (18)	100% (41)	100% (6)

Note: For some *Candida* species, not listed above, susceptibility to these drugs is variable.

\* *Candida krusei* isolates are intrinsically resistant to Fluconazole.