

GUIDELINES FOR INTERPRETATION OF GRAM STAIN RESULTS

Gram-Positive Cocci (GPC)

Pairs, chains, clusters:

- *Staphylococcus sp*

Pairs, chains:

- *Streptococcus sp*
- *Enterococcus sp*

Gram-Negative Cocci (GNC)

Diplococci

Pairs:

- *Neisseria meningitidis*
- *Neisseria gonorrhoeae*
- *Moraxella catarrhalis*

Other:

- *Acinetobacter sp*

Gram-Positive Bacilli (GPB)

Diphtheroids:

- Small, pleomorphic;
- > *Corynebacterium sp*
- > *Propionibacterium (anaerobe)*

Large, with spores:

- *Clostridium sp*
- *Bacillus sp*

Branching, beaded, rods:

- *Nocardia sp*
- *Actinomyces sp (anaerobe)*

Other:

- *Listeria sp*
(blood/cerebrospinal fluid)
- *Lactobacillus sp*
(vaginal/blood)

Gram-Negative Bacilli (GNB)

Enterobacteriaceae:

- *Escherichia coli*
- *Serratia sp*
- *Klebsiella sp*
- *Enterobacter sp*
- *Citrobacter sp*

Afermenters:

- *Pseudomonas sp*
- *Stenotrophomonas maltophilia*

Other:

- *Haemophilus influenzae*
- *Bacteroides fragilis group (anaerobe)*

Fusiform (long, pointed):

- *Fusobacterium sp (anaerobe)*
- *Capnocytophaga sp*

These guidelines are not definitive but presumptive for the identification of organisms on gram stain. Treatment will depend on the quality of the specimen and appropriate clinical evaluation.

STAFF

	Phone	Pager
Dr. D. Haldane, Level III lab (TB), Fungi, Parasites	473-2392	458-3756
Dr. R. Davidson, Bacteriology	473-5520	2163
Dr. T. Hatchette, Virology/Molecular Diagnostics	473-6885	458-3755
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SECTIONS

Microbiology Results	473-2266
Microbiology Processing Area	473-2120

ON-CALL SYSTEM (2300-0700 HTS)

Microbiology technologist on-call pagers:

Bacteriology		471-5122
Virology	476-3254	
Microbiologist on-call – call QEII HSC Locating	473-2220	

The laboratory is open from 0700 to 2300 hours daily.

The on-call system for Microbiology technologist on-call is available for emergencies only from 2300 hours to 0700 hours.

For information about specimen collection, transport-media, and initial processing, phone 473-2120.

ANTIBIOTIC ASSAYS

a. “Traditional” aminoglycoside dosing (usually every 8 hours):

Therapeutic range:	PRE	POST (0.5 hr. after IV)
Gentamicin	1-2 mg/l	5-8 mg/l (d)
Tobramycin	1-2 mg/l	5-8 mg/l

b. Single daily dosing of aminoglycosides: Post dose levels are not required. A level taken 6 hrs before the next dose is suggested in circumstances including: changing or impaired renal function; age over 65; exposure to concurrent nephrotoxins; infection with resistant organisms; or aminoglycoside therapy for more than 5 days.

The result should be < 1mg/l.

c. Vancomycin: Post (2 hr) vancomycin levels are only required in special circumstances (e.g. changing renal function; poor response to therapy; resistant organism; pharmacokinetic analysis).

Therapeutic range:	PRE	POST
Vancomycin	5-10 mg/l	Not routinely performed
	10-20mg/l*	

* For treatment of deep seated infections, osteomyelitis, meningitis and endocarditis and more resistant organisms (i.e. MRSA).

d. Notes:

- Assays are routinely performed 7 days per week. Amikacin levels are referred out.
- Assays of other antibiotics are not available.
- See the QEII HSC Pharmacy *Antimicrobial Handbook* for further information on monitoring guidelines.
- Post gentamicin levels for synergy for gram positive infections (3-5 mg/L).

ANAEROBIC SUSCEPTIBILITIES

Most anaerobes will be susceptible to metronidazole, except *Peptostreptococcus sp* which are often resistant, but usually susceptible, to penicillin.

Anaerobic susceptibilities are performed only on isolates from selected sites (e.g. endocarditis and brain abscesses) or on special request.



Capital Health

Antibiotic Susceptibility Patterns for Commonly Isolated Organisms

Division of Microbiology

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Developed by the Antimicrobial Agents Subcommittee
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