

Review of Antibiotics and Their Range of Effectiveness

When the Kirby-Bauer Antibiotic Susceptibility exercise was used at Rogers State University, students worked with strains of the following organisms: *Staphylococcus aureus* and *S. epidermidis*, *Pseudomonas aeruginosa*, *Serratia marcescens*, and *Escherichia coli*. Clinical strains can be expected to have different antibiotic sensitivities or resistances than environmental isolates.

TABLE 1. Survey of antibiotics used in antibiotic sensitivity testing in teaching laboratories

Antimicrobial agent	Antibiotic category	Response of organisms tested		
		Staphylococci (<i>S. aureus</i> and <i>S. epidermidis</i>)	<i>Pseudomonas</i> (<i>P. aeruginosa</i>)	Enterobacteriaceae (<i>Serratia</i> and <i>Escherichia</i>)
Ampicillin	Penicillin	S ^a	R ^b	S
Cephalothin	Cephem	S	R	S
Chloramphenicol	Phenicol	S	S	S
Ciprofloxacin	Fluoroquinolone	S	S	S
Erythromycin	Macrolide	S	R	R
Gentamicin	Aminoglycoside	S	S	S
Kanamycin	Aminoglycoside	S	R	S
Neomycin	Aminoglycoside	ND ^c	ND	ND
Penicillin	Penicillin	S	R	R
Streptomycin	Aminoglycoside	R	R	S
Tetracycline	Tetracycline	S	S	S

^a S, susceptible. This antibiotic is used by the Clinical and Laboratory Standards Institute, and infections with this organism are treated with this antibiotic. The strain may be susceptible.

^b R, resistant. This antibiotic is not used in treatment of infections caused by the organism. Resistance is assumed.

^c ND, no data. Data for this antibiotic were not included in the Clinical and Laboratory Standards Institute's information.