

ANTIMICROBIALS

Penicillins & Cephalosporins



Penicillins & Cephalosporins

Gram Positive Bacteria

Cocci: Staphylococcus, Strep,

Rods: Bacillus anthracis,
Actinomyces, Erysipelas

Gram Negative Bacteria

Rods: Escherichia coli, Klebsiella,
Proteus, Pasteurella, Bordetella

Pseudomonas-extended spectrum
e.g. ticarcillin

Anaerobic Gram Positive

Rods: Clostridium (tetanus,
black leg etc.)

Anaerobic Gram Negative

Bacteroides (many resistant)

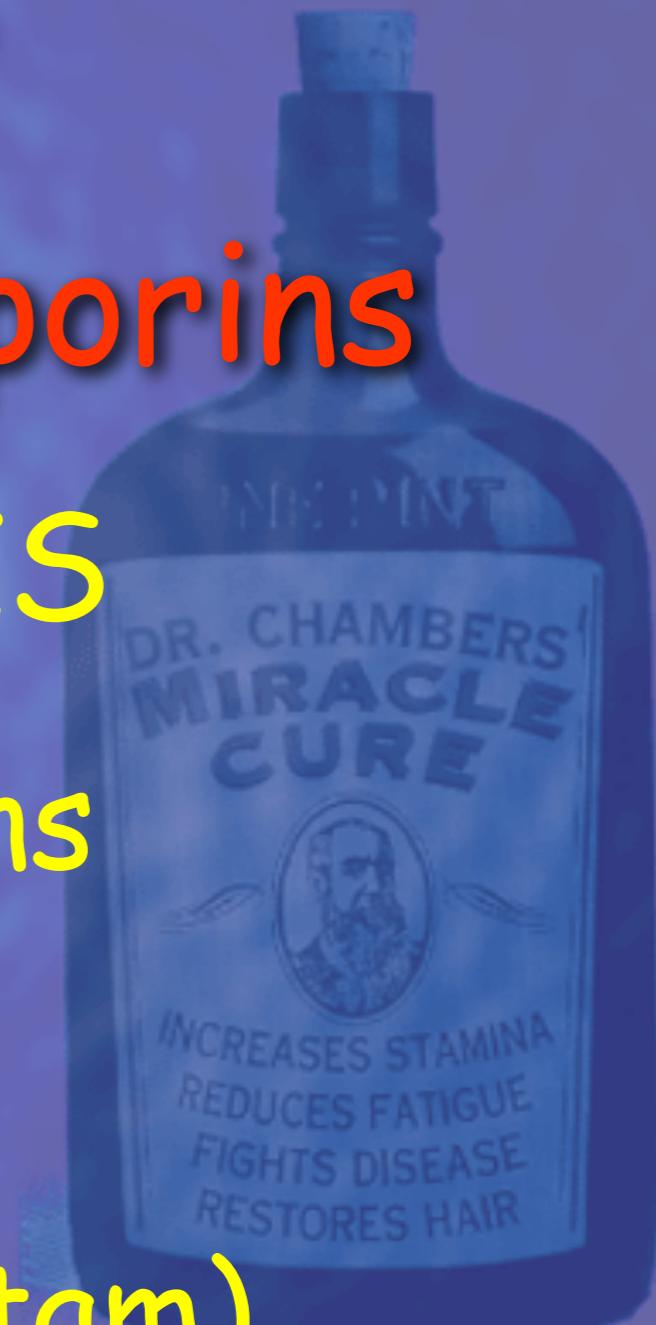


ANTIMICROBIALS

Penicillins & Cephalosporins

CELL WALL SYNTHESIS

- Penicillin binding proteins
- beta lactamases
- clavulanic acid (+sublactam)



ANTIMICROBIALS

Penicillins & Cephalosporins

ACTIVITY AGAINST:

- Primarily Gram Positive Bacteria

Penicillin (G & V)

- Broad spectrum - Positive & Negative

Amoxicillin and ampicillin

- Primarily Gram Negative Bacteria

Ceftiofur



ANTIMICROBIALS

Penicillins and Cephalosporins

Adverse reactions:

Allergic/anaphylactic reactions

Suprainfections (guinea pigs!)

Electrolyte disturbances (Na,K salts)

Ticarcillin-avoid heparin, anticoagulants

Procaine reactions in horses



ANTIMICROBIALS

Penicillin Pharmacokinetics

- Penicillin G (Na, K) inactivated in acid
- Lipid insoluble - extracellular
- Poorly distributed across lipid barriers
(CNS, eye, prostate)



ANTIMICROBIALS

Penicillin Pharmacokinetics

- Semi-synthetic penicillins PO use
- Excreted unchanged in the urine
(except ampicillin)
- Slow excretion with aspirin or probenecid



ANTIMICROBIALS

Penicillin Pharmacokinetics

- Duration of Action:
 - Salts (Na, K) 4-6 hours
 - Procaine salt aqueous 24 hours
 - Procaine salt in oil 48 hours
 - Benzathine salt 48+ hours
 - procaine in race horses!

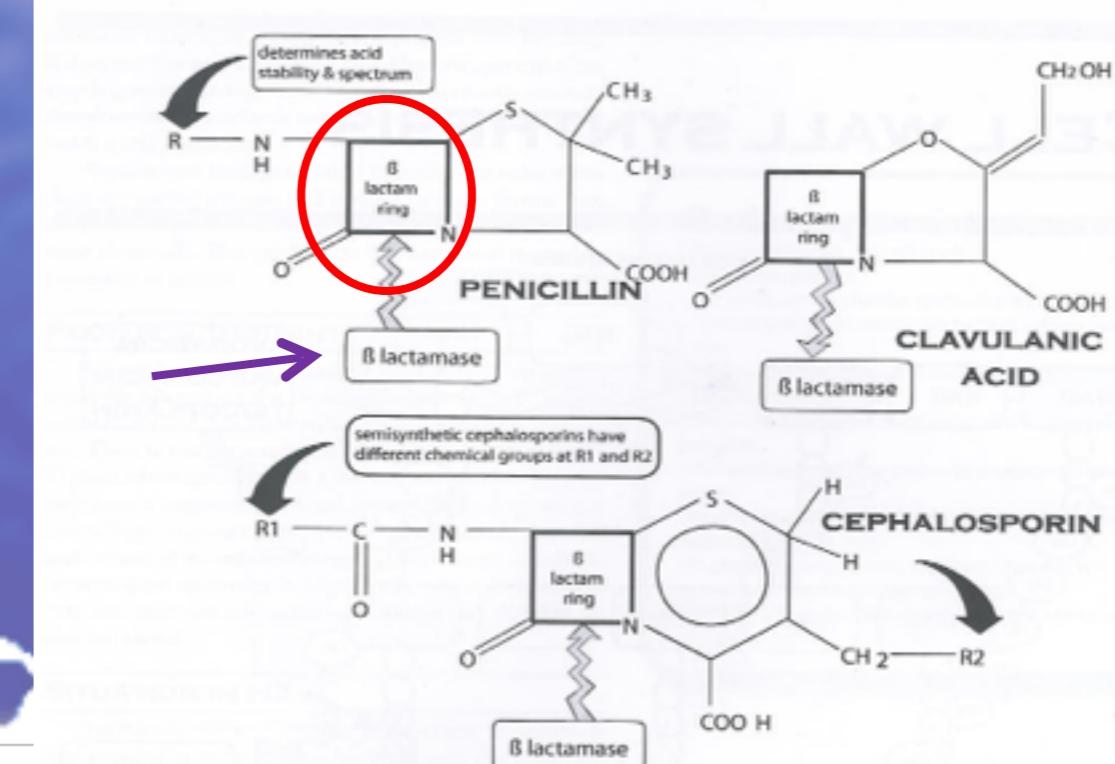


ANTIMICROBIALS

Penicillins - Gram positive,

inactivated by beta lactamase

- Procaine Penicillin G
 - Benzathine Penicillin
 - Penicillin V



Each standard curative treatment course for 400 horses must be added for each further treatment to a maximum of 72 hours following the last treatment. HORSES may not race within 504 hours (21 days) of the last treatment or until testing shows clearance of procaine.

BATCH: 5314801
EXPIRY: 04/01



200mL

1217-3-06/97

INTRACILLIN™ 300

Each mL contains Procaine Penicillin G 300,000 I.U.



5308101 EXP FEB 2004



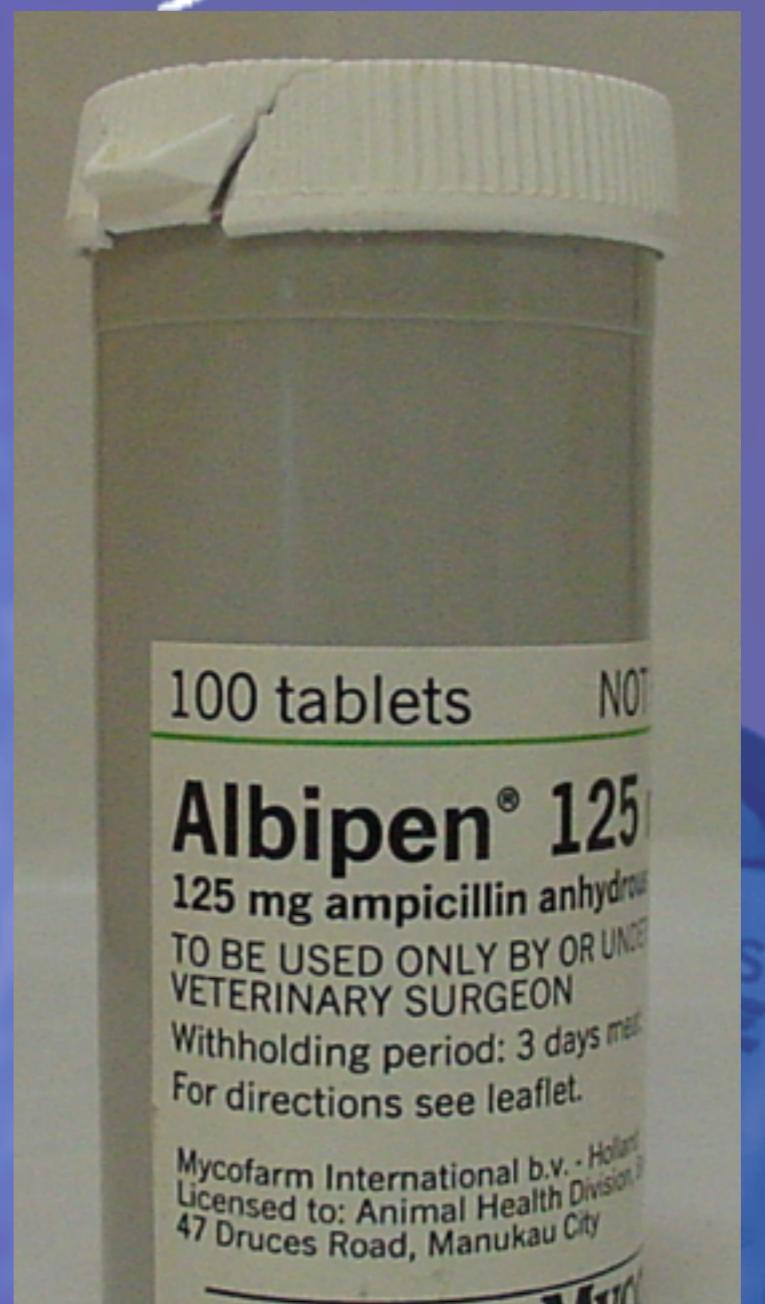
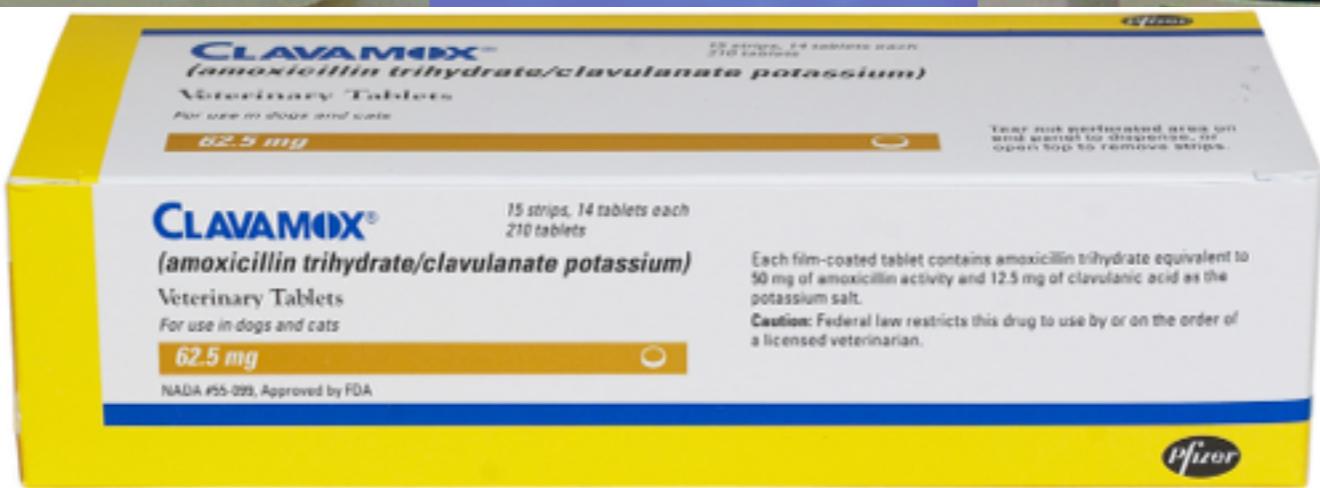
ANTIMICROBIALS

Penicillins—"broad spectrum" but
susceptible to beta lactamase

- Amoxicillin q 8-12 h
- Ampicillin
- Amoxicillin + clavulanic acid*

*resistant to beta lactamase



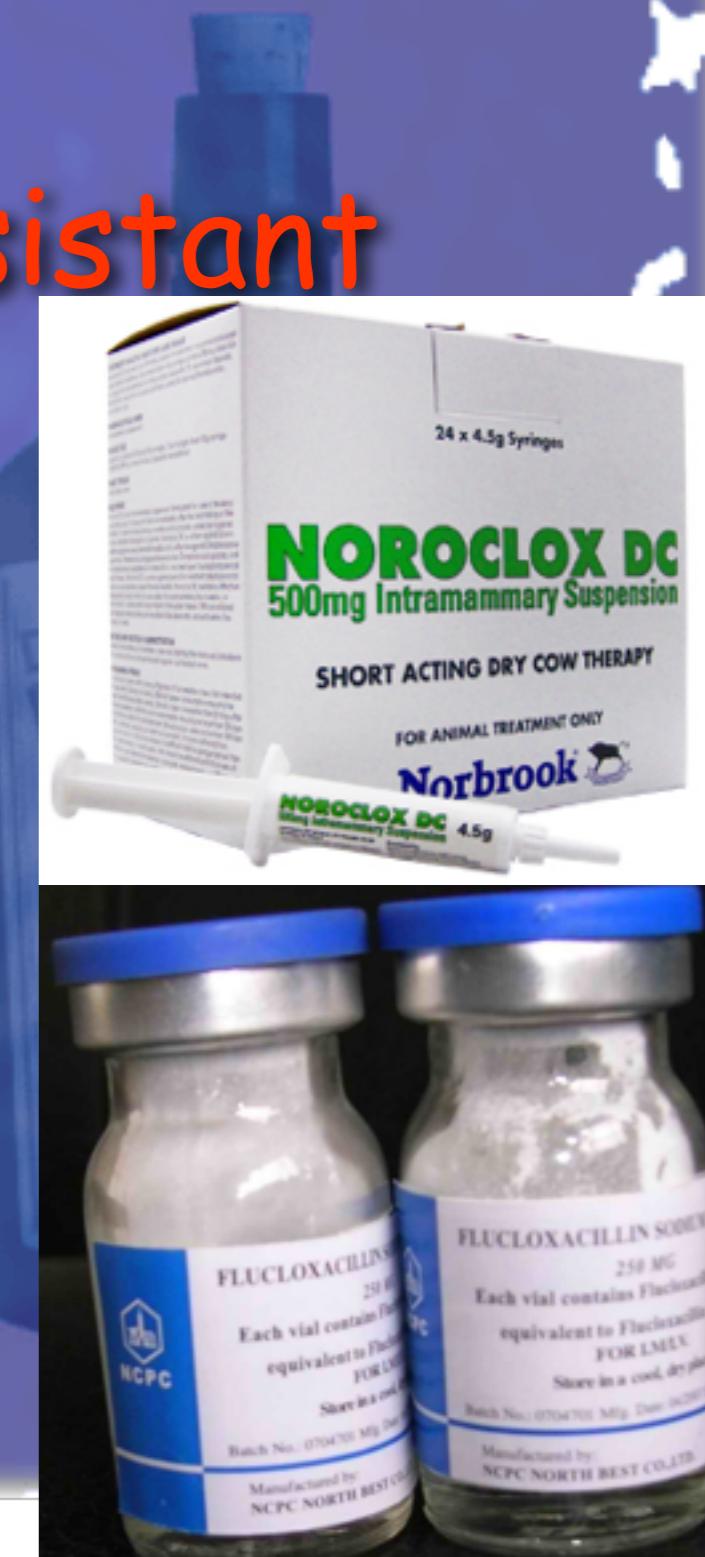


ANTIMICROBIALS

Penicillins-beta lactamase resistant

Narrow gram + spectrum

- Cloxacillin q8h
- Flucloxacillin q8h



ANTIMICROBIALS

Penicillins-extended spectrum

Gram + and gram - aerobes

Gram + anaerobes;

Pseudomonas

- Carbenicillin
- Ticarcillin



ANTIMICROBIALS

Cephalosporins-Pharmacology

- Similar to penicillins
- Doses q8-12h
- ceftiofur q24h, nil withholding



ANTIMICROBIALS

Cephalosporins-Pharmacokinetics

- Similar to penicillins:
e.g excreted in urine, inhibition by aspirin and probenecid

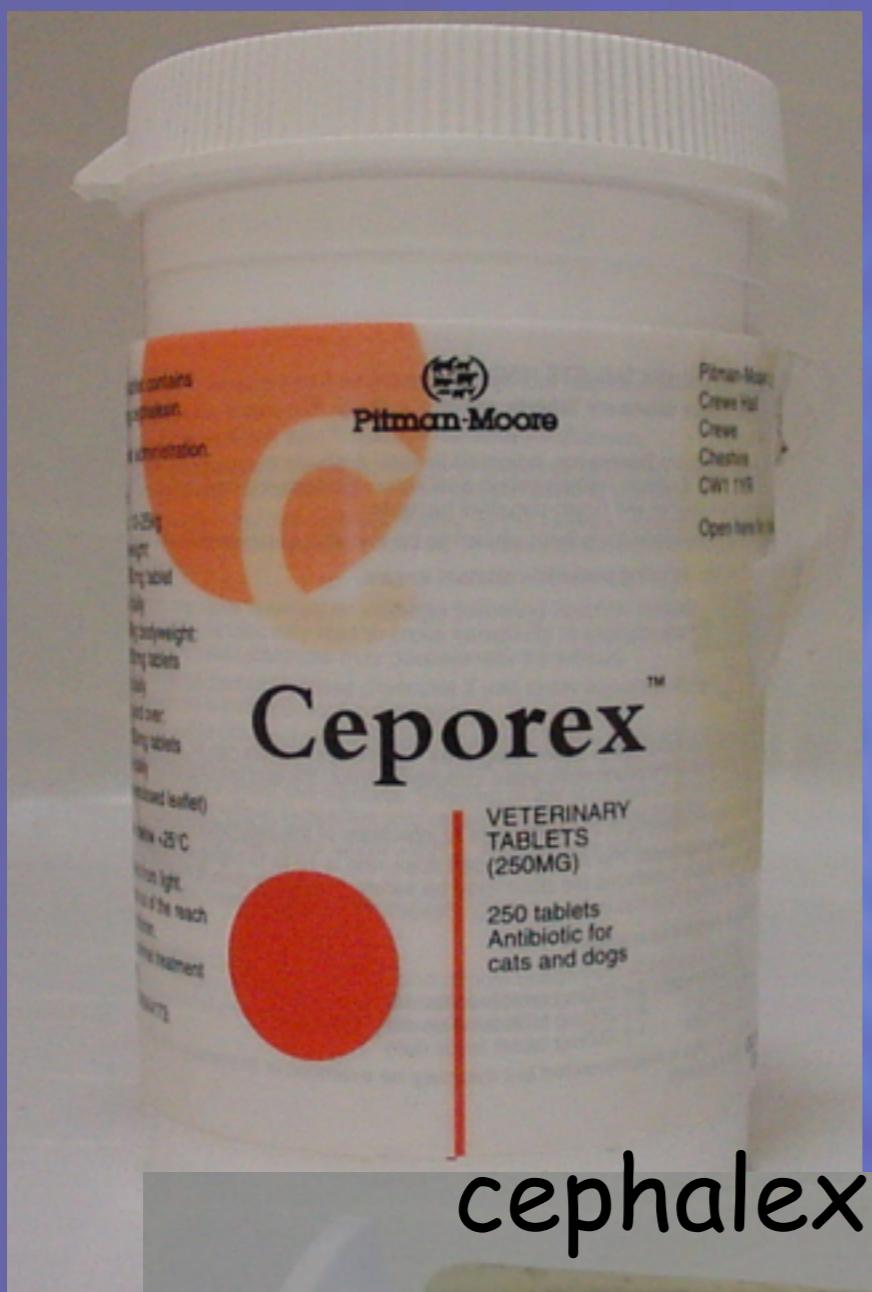


ANTIMICROBIALS

Cephalosporins

- Cephalexin- Gram +, (-)
- Cephalothin- Gram +, (-) I
- ceftiofur-Gram - , (+) II (III)
- ceftazidime-Gram +, - III

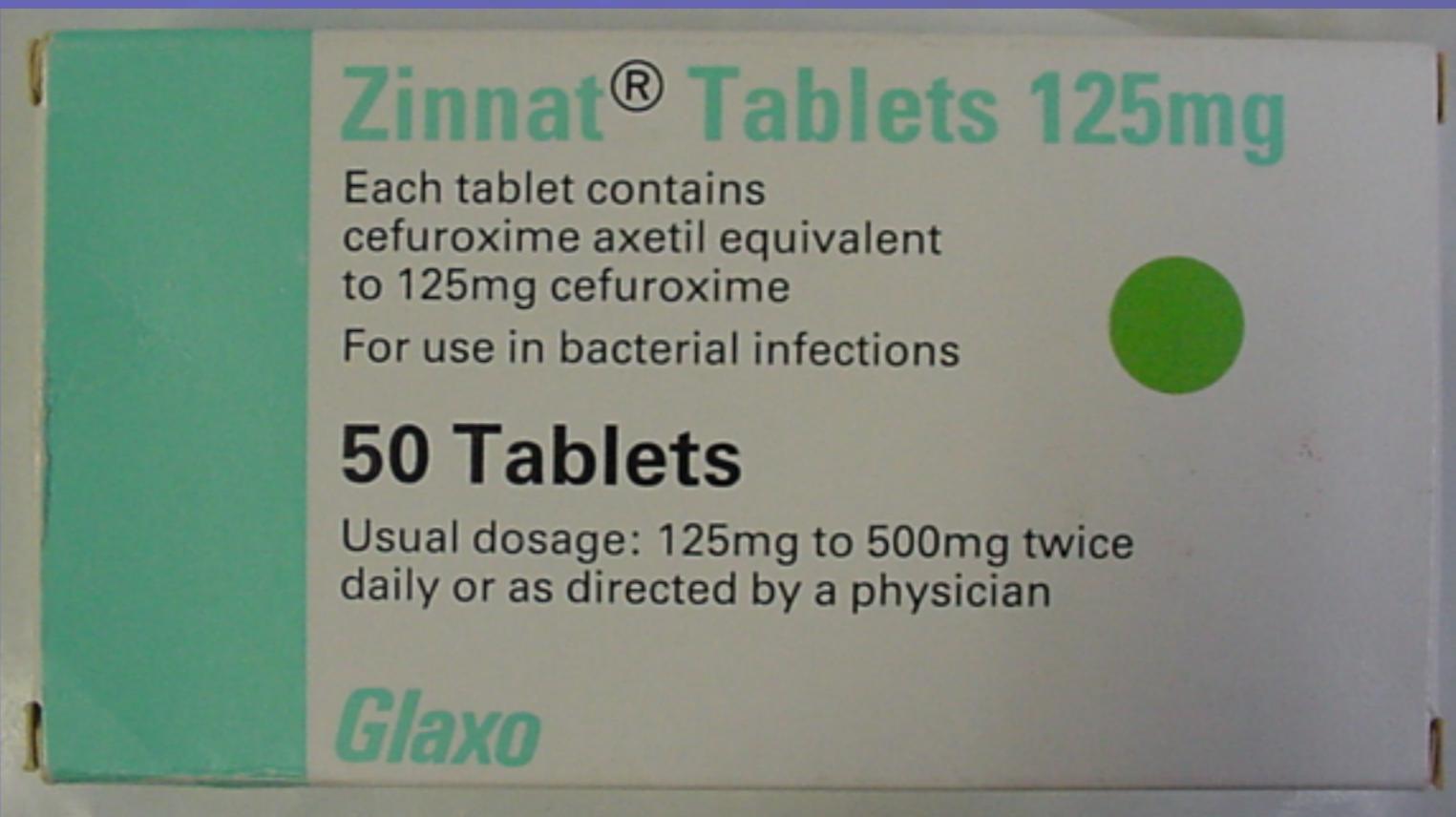




cephalexin

INDICATIONS: For the treatment of infections susceptible to cephalaxin in cats and dogs.

DOSAGE AND ADMINISTRATION: Cats & Dogs: 15 mg/kg b.w. twice daily. Each syringe graduation delivers 30mg of cephalaxin in 0.25 mL (sufficient for a 2 kg dose). Refer carbon text for full details.





PRESCRIPTION ANIMAL REMEDY
KEEP OUT OF REACH OF CHILDREN
FOR ANIMAL TREATMENT ONLY

EXCENEL™

Sterile Suspension

ceftiofur hydrochloride
sterile suspension

Equivalent to:

50 mg/mL

ceftiofur

For the treatment of respiratory infections in cattle and pigs and bovine foot rot.

100 mL

Pharmacia & Upjohn

ANTIMICROBIALS

Penicillins and Cephalosporins

Uses: skin, urinary tract,
respiratory tract infections,
footrot, foot abscess

Adverse reactions

Uses and routes of administration



Strangles

- Streptococcus infection
- Penicillin ?
 - pros and cons
 - route and choice?
- Supportive therapy
 - Drain and flush abscess

