# ANTIMICROBIALS

## FLUOROQUINOLONES

enrofloxacin (Baytril)

orbifloxacin (Orbax)

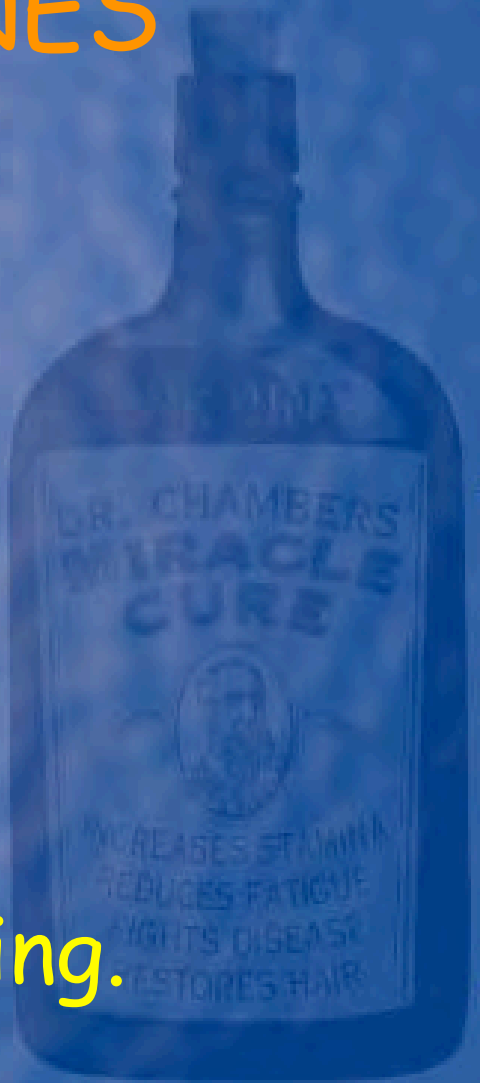
marbofloxacin (Marbocyl)

# ANTIMICROBIALS

## FLUOROQUINOLONES

## (4-Quinolones)

- Good gram negative efficacy
- Some gram positive e.g. staphs
- NOT anaerobes
- Risk of bacterial mutation arising.



# Fluoroquinolones

**Gram Positive Bacteria**

Some activity e.g. **Staphylococcus,**

**Anaerobes**

Not efficacious

**Gram Negative Bacteria**

**Brucella, Pasteurella, Shigella, E. coli**

**Pseudomona aeruginosa,**

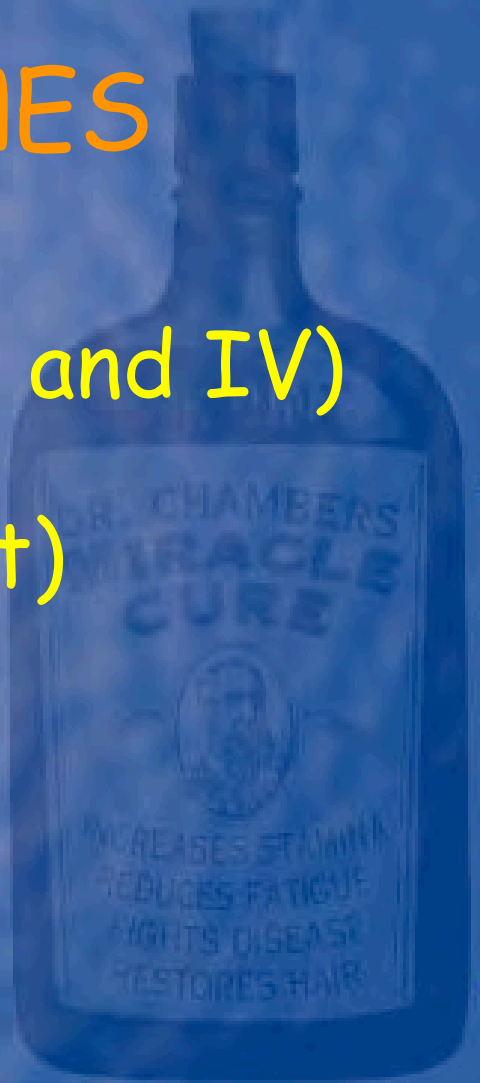
**Other susceptible:**

**Mycoplasma, Chlamydia trachomatis, Rickettsia, Mycobacterium (not Johne's)**

# ANTIMICROBIALS

## FLUOROQUINOLONES

- DNA gyrase (topoisomerase II and IV)
- Bacteriocidal (paradoxic effect)
- Concentration dependent
- Post antibiotic effect.



# ANTIMICROBIALS

## FLUOROQUINOLONES

### enrofloxacin (Baytril)

### Toxicity

- Normal & high doses – blindness in cats
- Growing animals – cartilage damage
- Adverse effects in people
- Avoid in animals with a history of seizures.

# ANTIMICROBIALS

## FLUOROQUINOLONES

- Highly Lipophilic
- Good distribution to most tissues
- Oral absorption – variable, food.

# ANTIMICROBIALS

## FLUOROQUINOLONES

- Antacids & sucralfate interfere
- Partial metabolism in the liver
- Excreted in urine (↓ dose if renal disease)
- Long half-life
- Interference – chloramphenicol, rifampicin.

# ANTIMICROBIALS

## FLUOROQUINOLONES

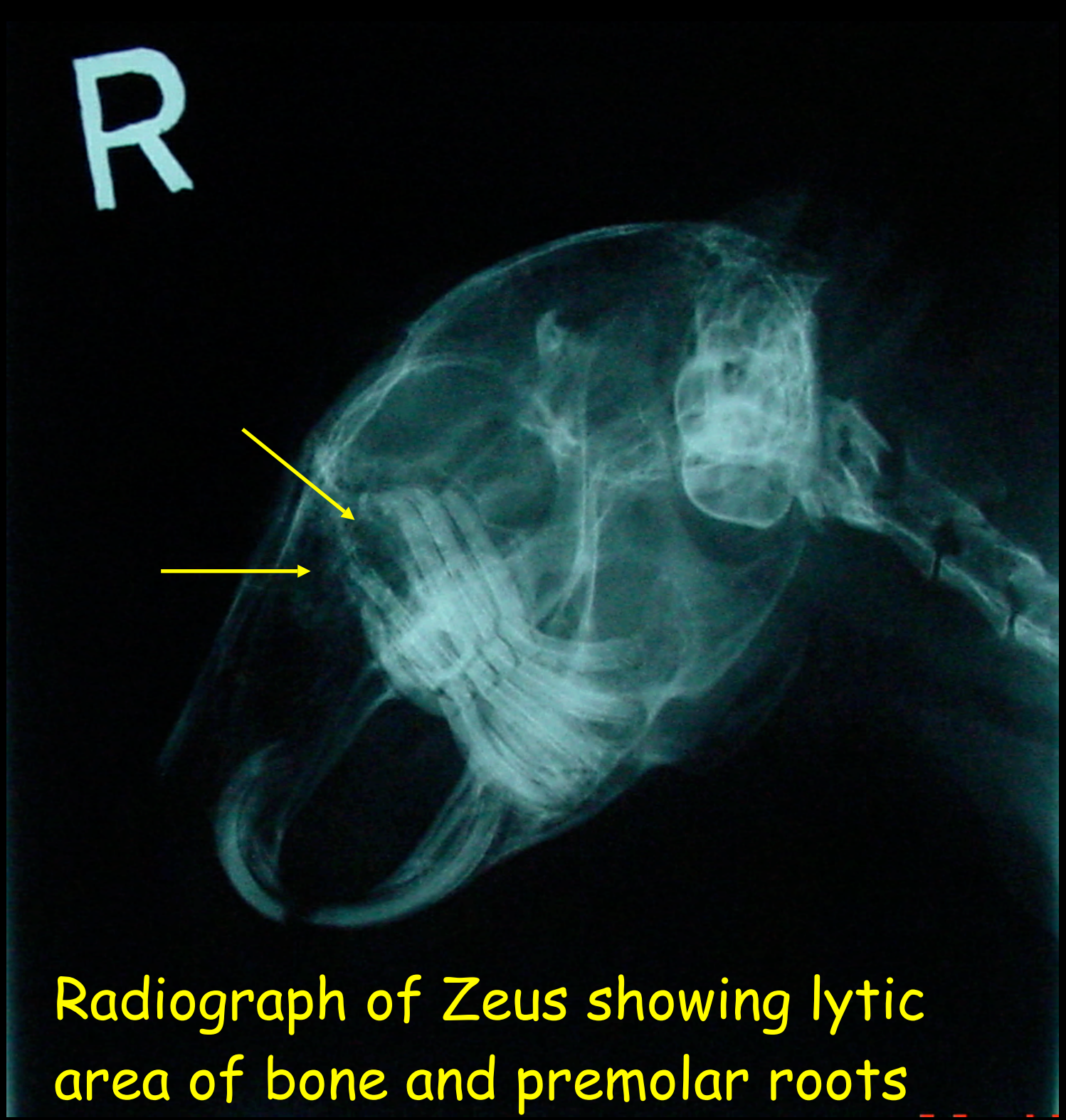

- Used in small mammals due to safety and efficacy in gram negative infections e.g. Pasteurella
- **May cause dermal necrosis by SC injection.**

# ANTIMICROBIALS

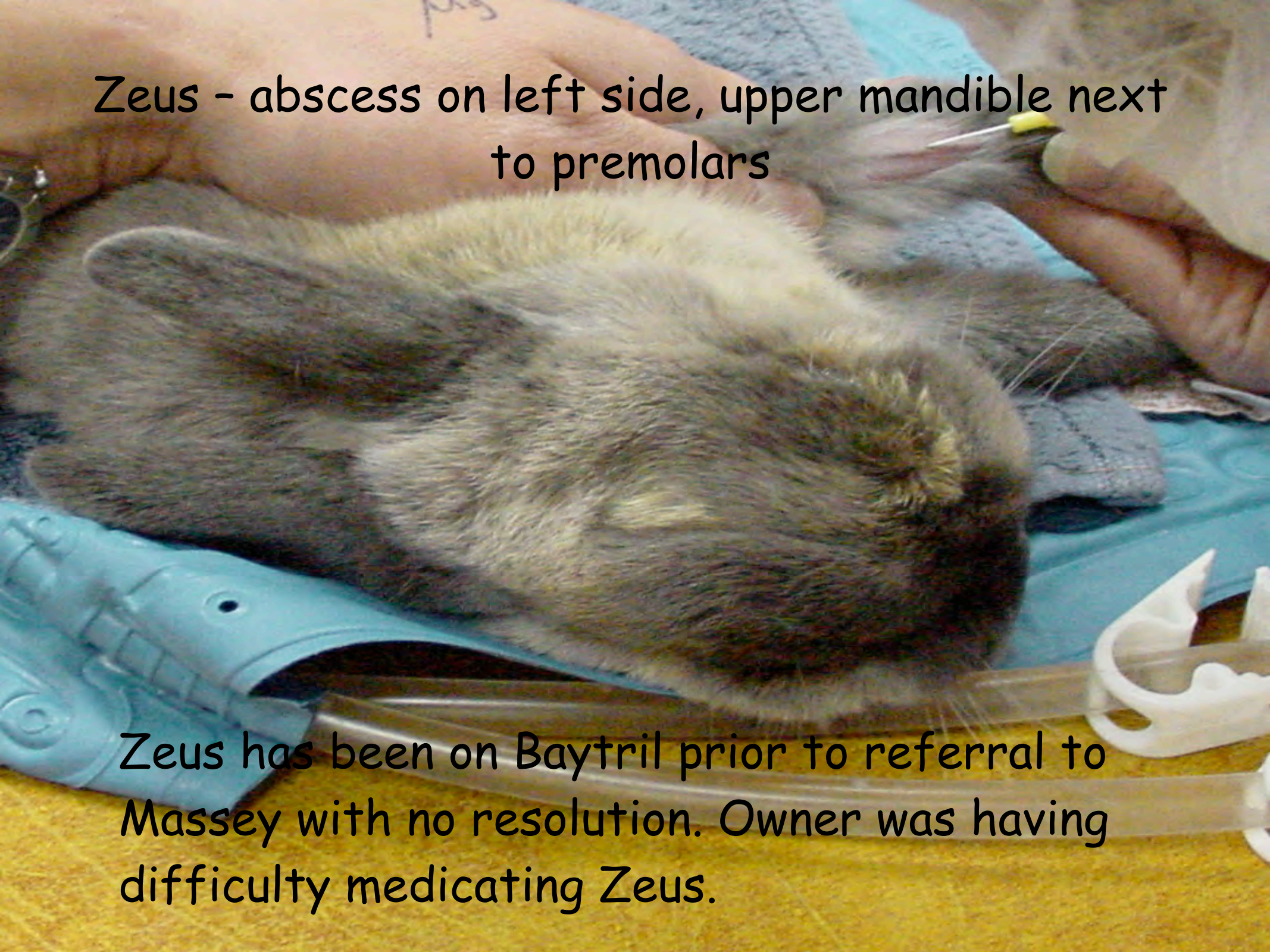
## FLUOROQUINOLONES - USES

- DO NOT USE for routine infections
- Urinary tract infections – Pseudomonas
- Prostatitis in dogs
- Osteomyelitis due to Gram negative bacteria
- Deep, granulomatous pyodermas
- Serious respiratory tract infections.

Zeus – radiograph of lesion on left side



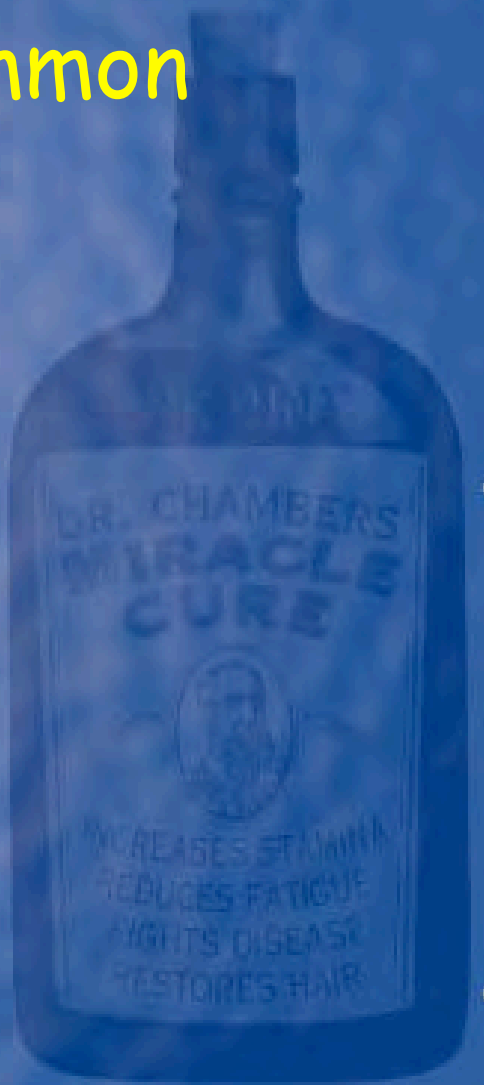

Radiograph of Zeus showing lytic area of bone and premolar roots



Zeus - abscess on left side, upper mandible next to premolars

Zeus has been on Baytril prior to referral to Massey with no resolution. Owner was having difficulty medicating Zeus.

Pasteurella multocida – most common infection in rabbits but was not cultured from the abscess.

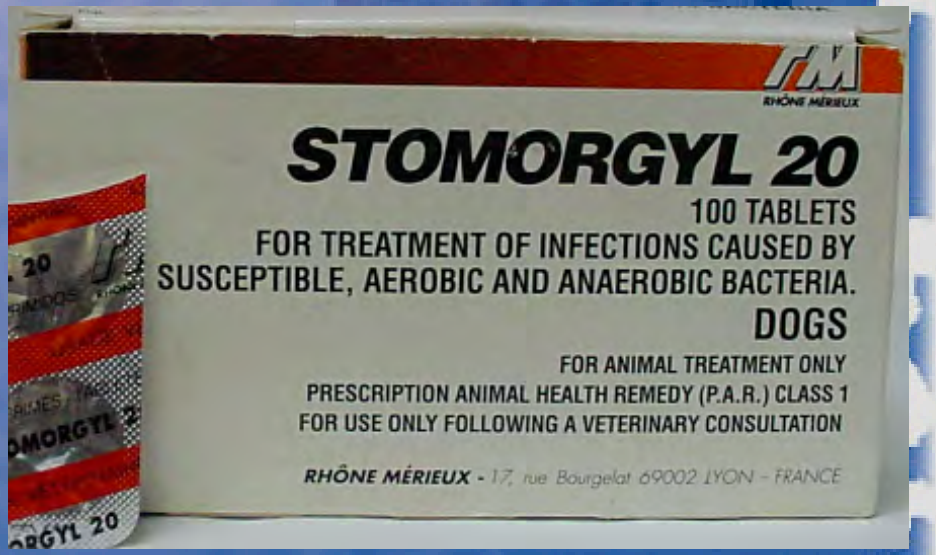


# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole


- Anaerobes
- Protozoa – e.g. Giardia
- Bactericidal
- Swine dysentery -
  - dimetridazole



# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole


Mechanism of Action:

- DNA damage and repair mechanisms
  - Mammalian and bacteria.

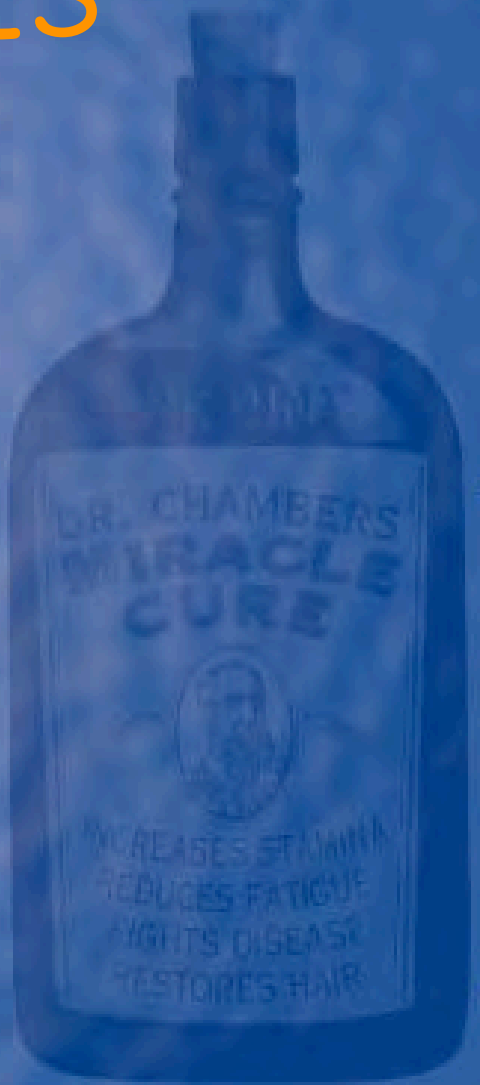
# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole

Pharmacokinetics:

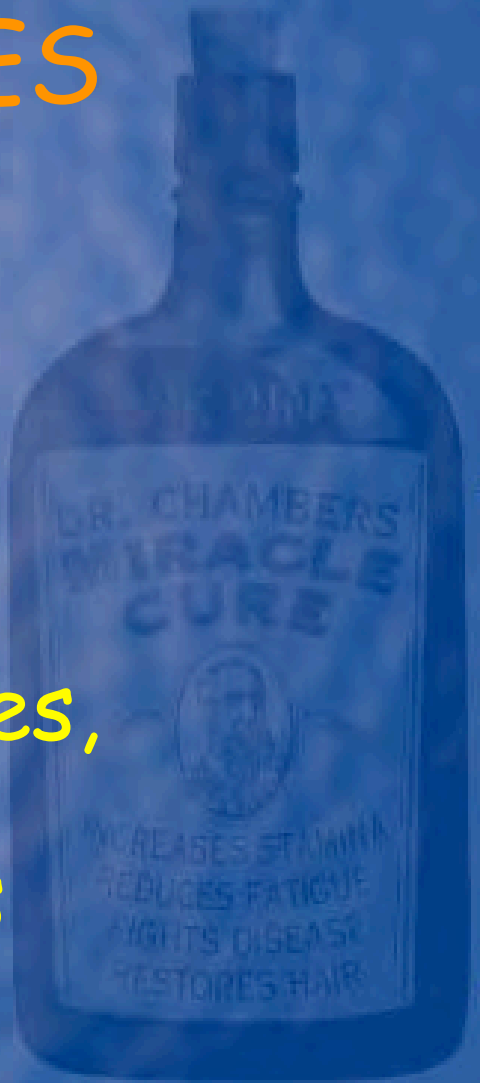
- bioavailability ~ 100%
- distribution to most tissues
- extensive hepatic metabolism
- excreted in urine.



# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole



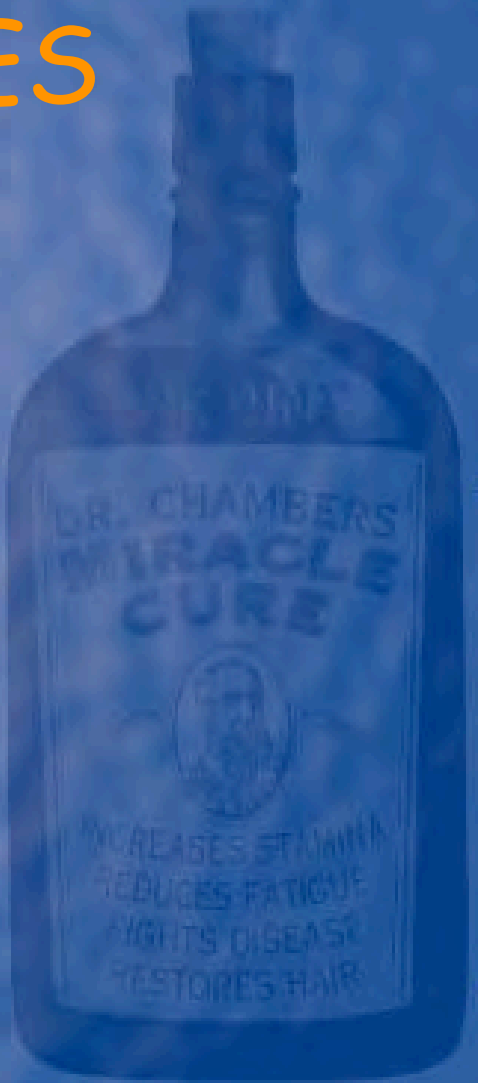

- Nausea in people (pets?)
- Neurotoxicity – ataxia, seizures, and head tilt reported in dogs

# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole

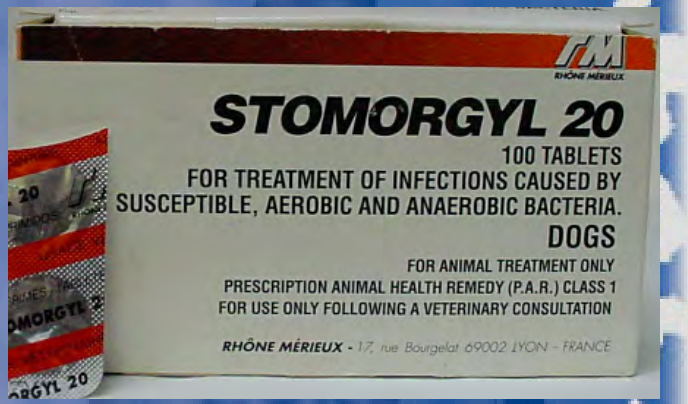
- Giardia



# ANTIMICROBIALS

## NITROIMIDAZOLES

### metronidazole




Uses:

- Anaerobic infections
- Gingivitis in dogs and cats
- Dimetridazole – swine dysentery
- Bacteroides, Clostridia, Helicobacter