

ANTIMICROBIALS

SULPHONAMIDES & POTENTIATED SULPHONAMIDES

- ◆ Sulphadiazine
- ◆ Sulphamethoxole
- ∞ Trimethoprim
- ∞ Baquiloprim



SULPHONAMIDES

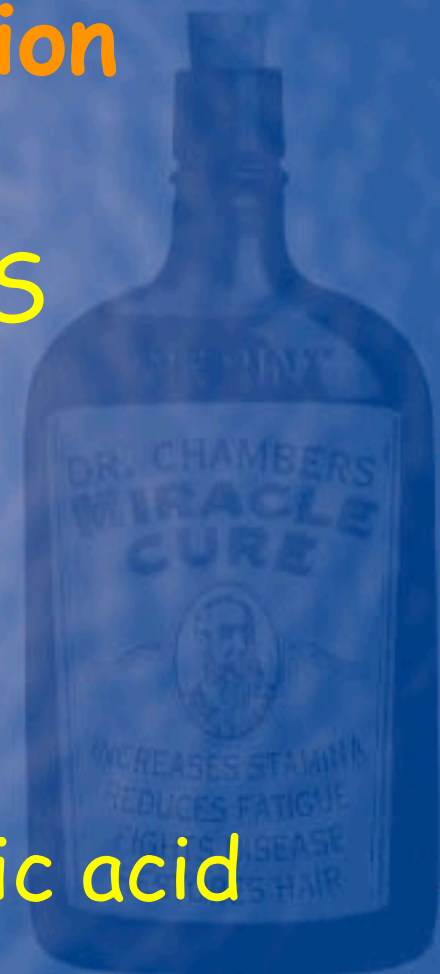
Mechanism of Action

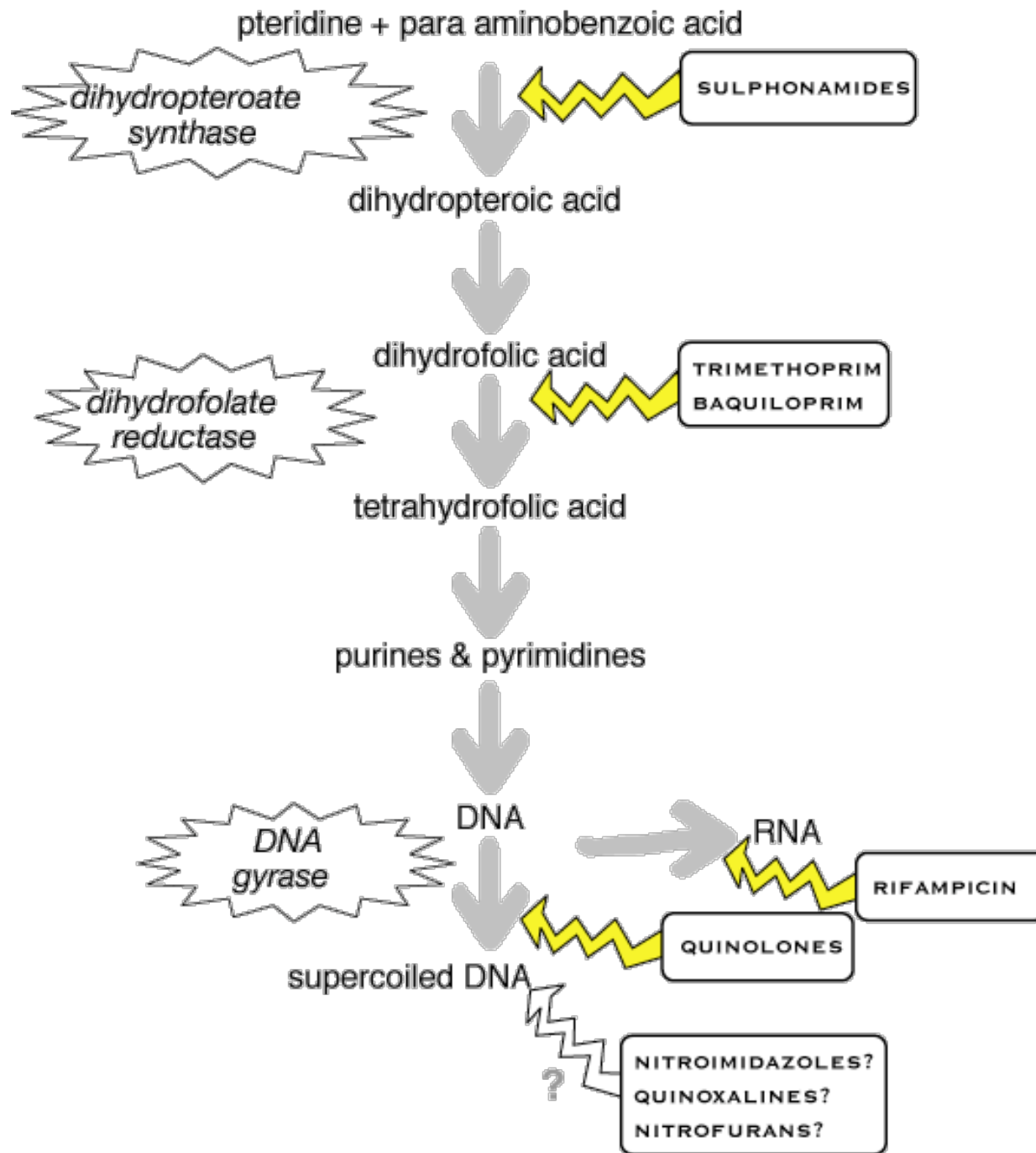
NUCLEIC ACID SYNTHESIS

Sulphonamides:

Competitive Inhibition

of PABA to dihydrofolic acid





ANTIMICROBIALS

SULPHONAMIDES

SULPHONAMIDES:

Bacteriostatic

INACTIVATED BY PUS AND
NECROTIC TISSUE



SPECTRUM OF ACTIVITY

SULPHONAMIDES

SULPHONAMIDES:

Bacteriostatic:

some Gram +, -

coccidia, protozoa

Widespread Resistance & Cross R



TOXICITY

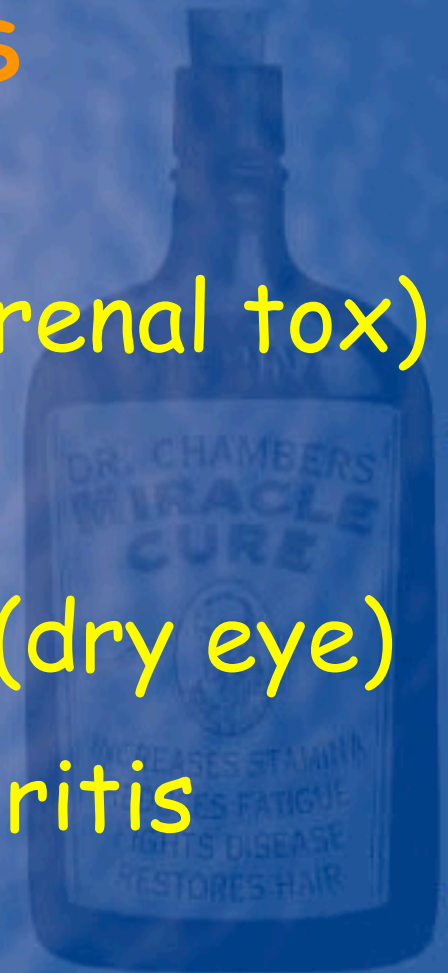
SULPHONAMIDES

Crystalluria (potential for renal tox)

Hypersensitivity reactions

Keratoconjunctivitis sicca (dry eye)

Immune mediated polyarthrititis
(large dog breeds)



TOXICITY

SULPHONAMIDES

Vomiting

Drug induced fever

Vitamin K deficiency

Hypothyroidism

Cats salivate



TOXICITY

SULPHONAMIDES

Blood dyscrasias:

bone marrow depression

leukopaenia, anaemia

thrombocytopenia

Monosodium salt injectables are
corrosive and irritate tissues



PHARMACOKINETICS

SULPHONAMIDES

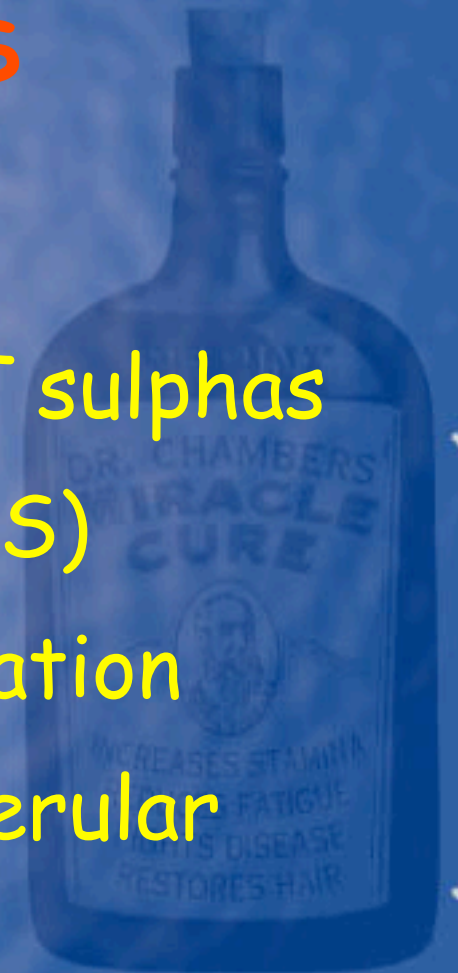
Sulphonamides are weak acids

Absorbed well except for GIT sulphas

Distribution good (eye and CNS)

Hepatic Metabolism by acetylation

Elimination - tubular and glomerular filtration



USES

SULPHONAMIDES

Gastrointestinal disease/diarrhoea

calves, cats, dogs, sheep, goats,
pigs, deer and horses



DRUG INTERACTIONS

SULPHONAMIDES

B Vitamins

Procaine

Highly Protein bound drugs, NSAIDs

Antacids if concurrent oral administration



Mechanism of Action

POTENTIATED SULPHONAMIDES

Trimethoprim and Baquiloprim

Aka Diaminopyrimidine analogues:

Inhibit dihydrofolate reductase:
prevent the conversion of dihydrofolic
acid to tetrahydrofolic acid



SPECTRUM OF ACTIVITY

POTENTIATED SULPHONAMIDES

Trimethoprim and Baquiloprim

Diaminopyrimidine analogues are:

Synergistic with sulphonamides

Bacteriocidal - broad spectrum
(not *Pseudomonas*, anaerobes?)



TOXICITY

POTENTIATED SULPHONAMIDES

Blood dyscrasias

Hypersensitivities in large dog breeds

Vomiting, Anorexia, Diarrhoea

Fever, weakness, depression

Co-Trim (sulphamethoxazole)
associated with hyperkalaemia



TOXICITY

POTENTIATED SULPHONAMIDES

Hepatotoxicity

Potentially fatal interaction with
detomidine in the horse



PHARMACOKINETICS

POTENTIATED SULPHONAMIDES

Half-life varies with species

Use baquiloprim in cattle $T_{1/2}$ 10 hrs



USES

POTENTIATED SULPHONAMIDES

Frequent use for:

Osteomyelitis

Prostatitis

Respiratory tract infections

Staph pyoderma



USES

POTENTIATED SULPHONAMIDES

Frequent use for:

Urinary tract infections

Wounds

Footrot

Diarrhoea

Navel ill.....



SUMMARY

POTENTIATED SULPHONAMIDES & SULPHONAMIDES

- CHEAP \$\$
- BROAD SPECTRUM
- BACTERIOCIDAL IN COMBINATION
- ADVERSE REACTIONS
- NUMEROUS INDICATIONS

