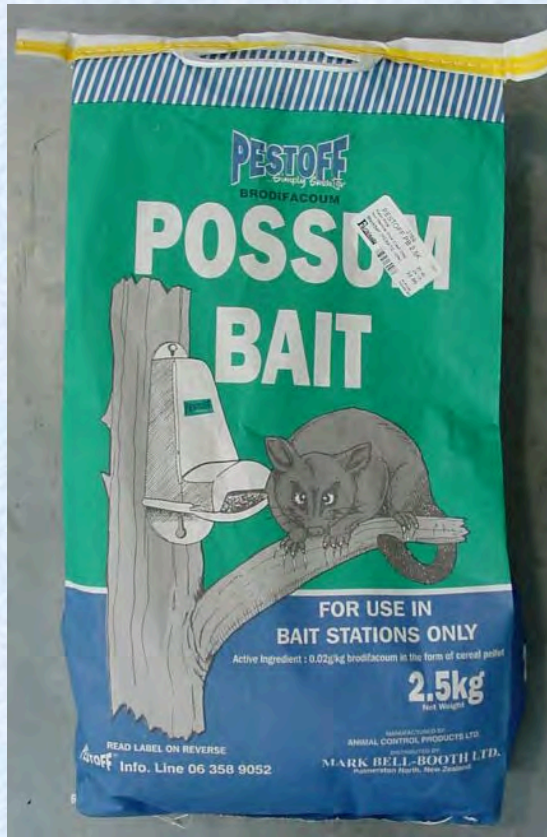


ANTICOAGULANT TOXICITIES



ANTICOAGULANT TOXICITIES

Problems

- Dyspnoea, lethargy, weakness
- Coughing, pallor, anorexia
- Vomiting
- Mucous membranes
 - Pale

ANTICOAGULANT TOXICITIES

SOURCES

Anticoagulant rodenticides

- First Generation Dicoumarins
 - warfarin
 - coumatetralyl & others
 - $T_{\frac{1}{2}}$ short 14-15 hours



ANTICOAGULANT TOXICITIES

SOURCES

Anticoagulant rodenticides

- Indanediones
 - Pindone (short acting)
 - Diphacinone (longer acting)
 - $T_{\frac{1}{2}} = 4-5$ days in dogs



ANTICOAGULANT TOXICITIES

SOURCES

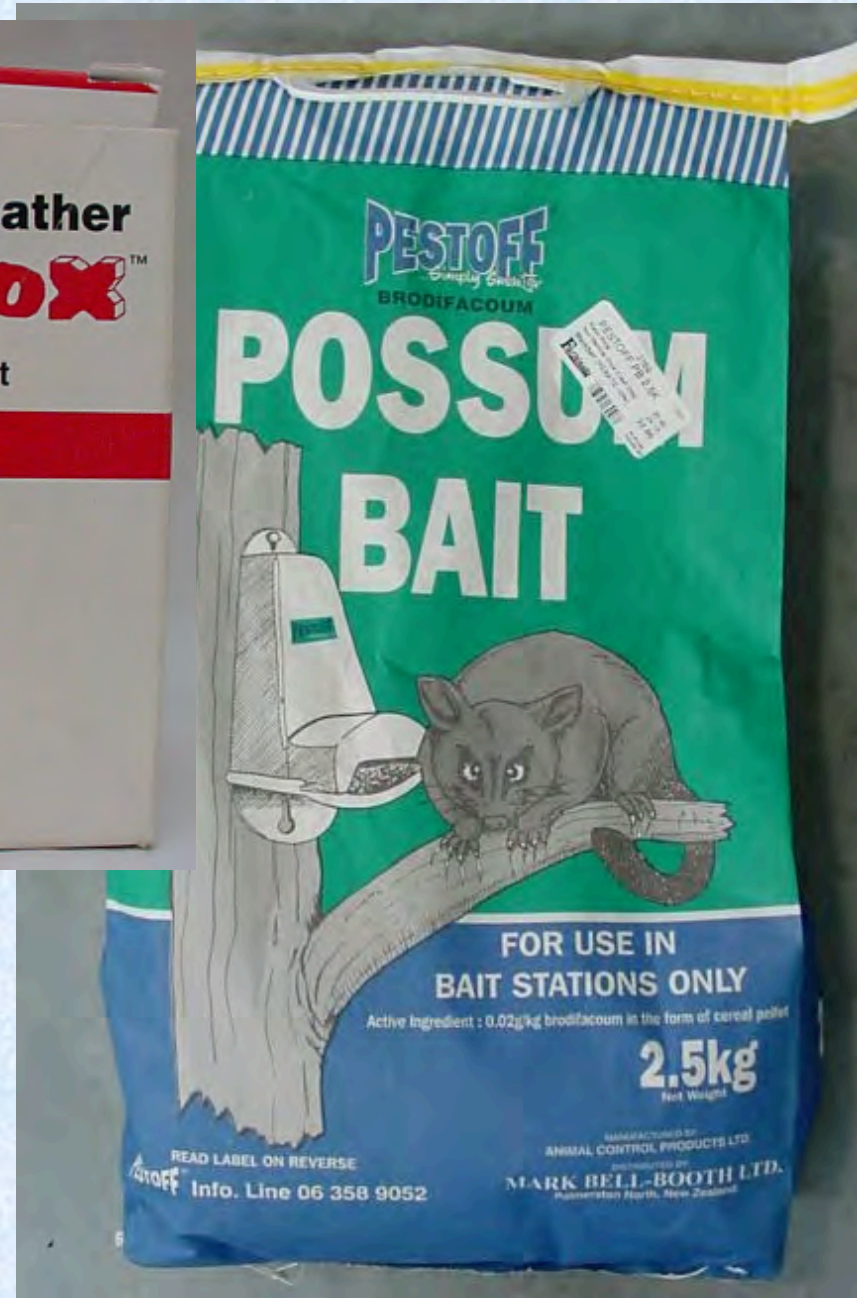
Long acting Anticoagulant rodenticides

brodifacoum Talon

$T_{\frac{1}{2}}$ = 6 days in dogs



Other rodenticides - flocoumafen Storm

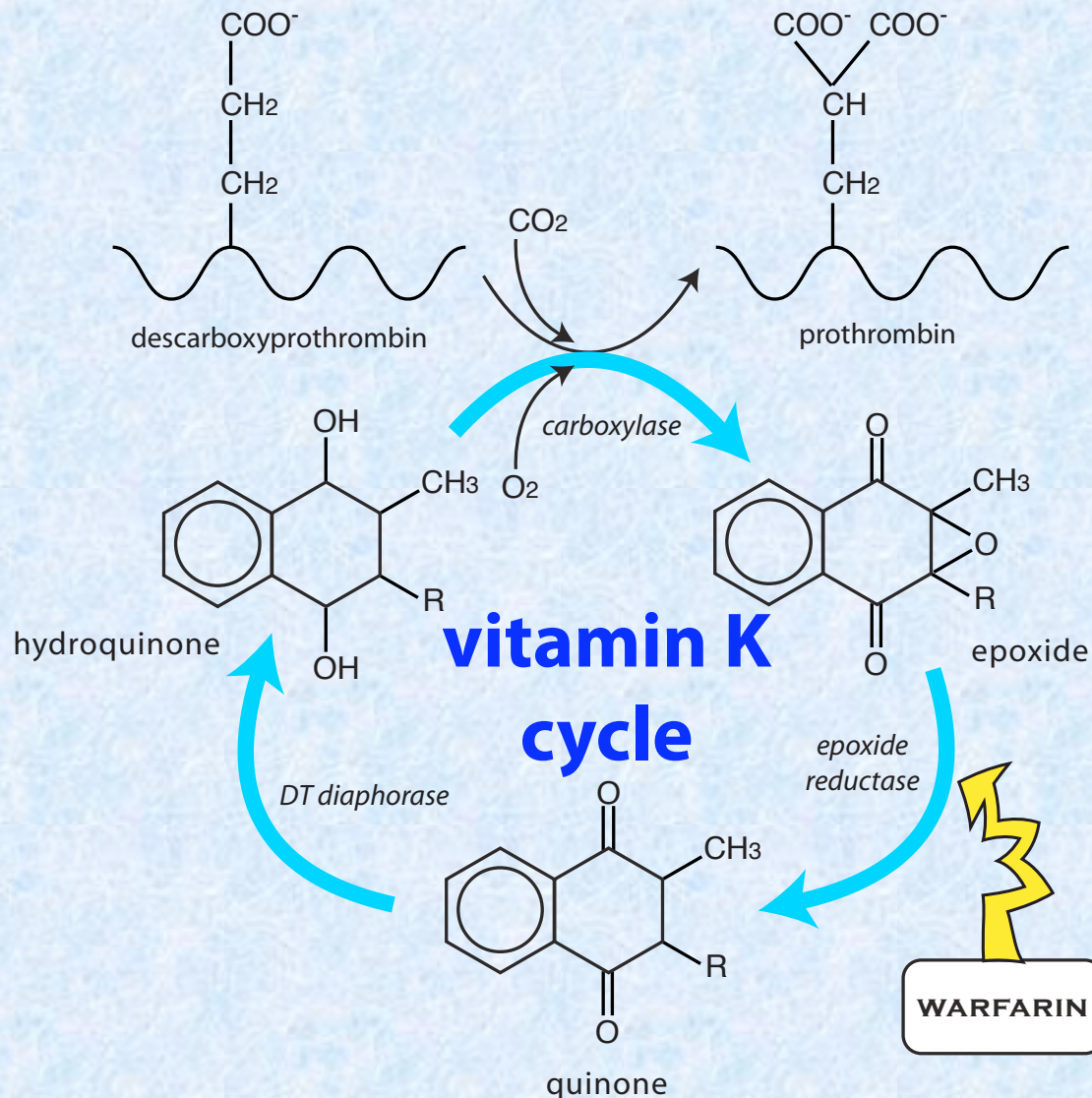


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Mechanism of Action:

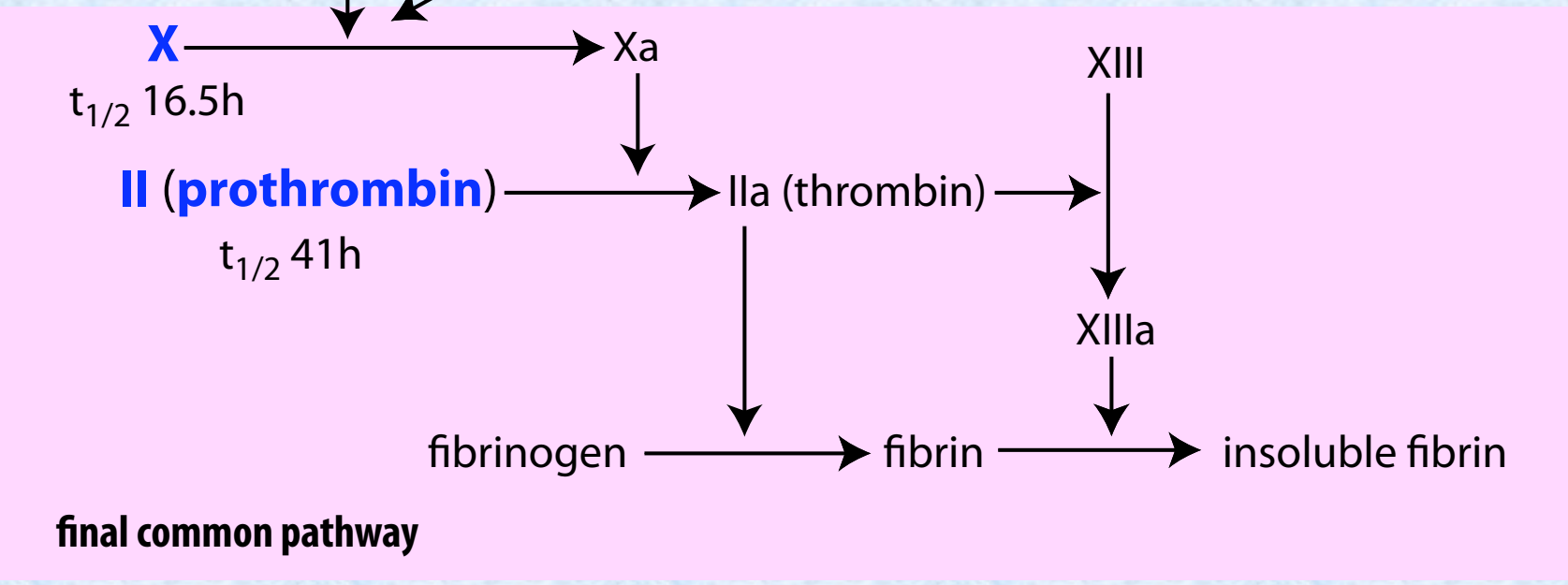
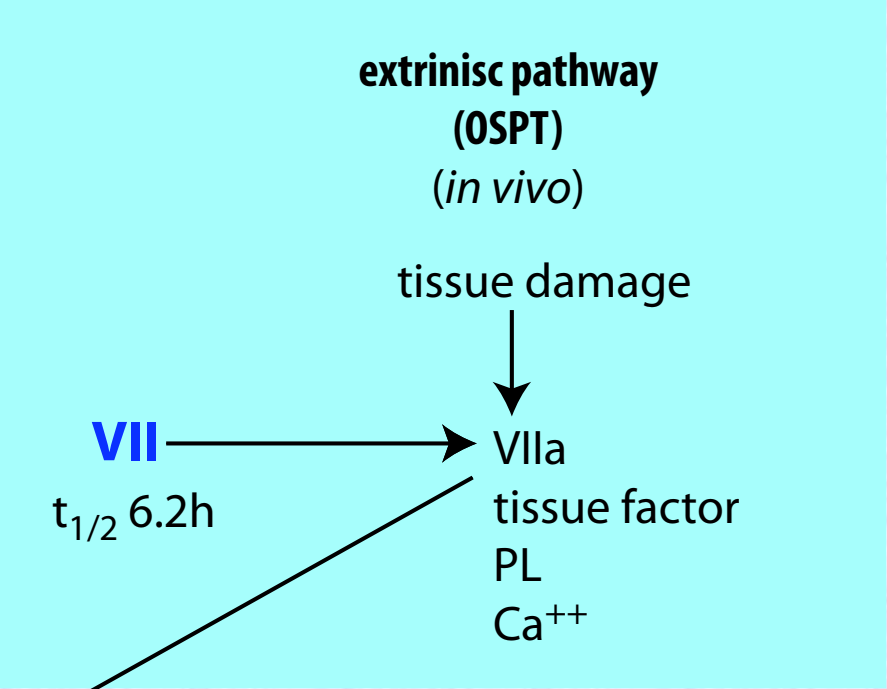
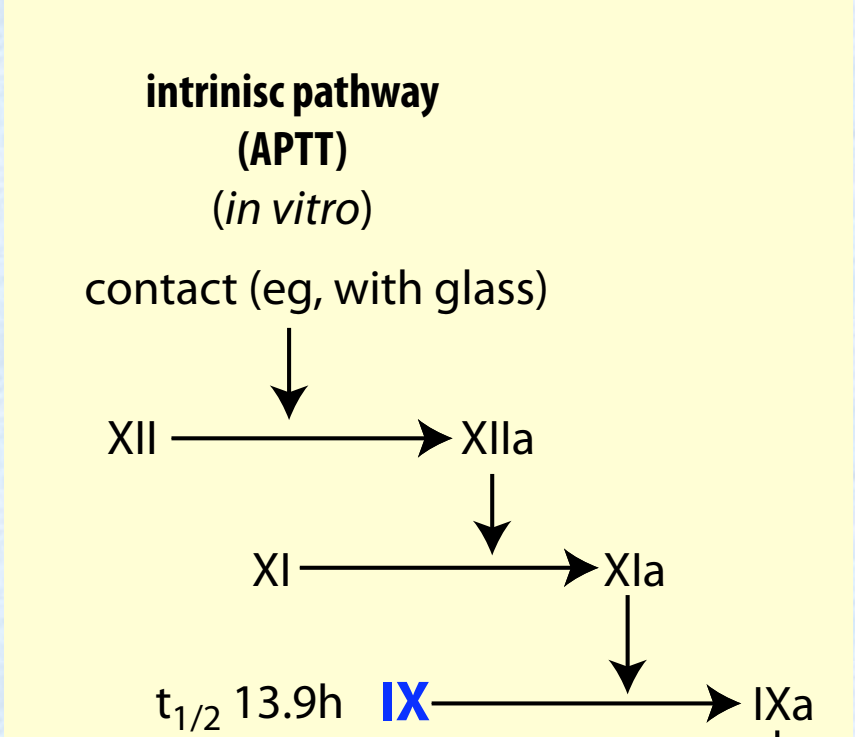
- Competitive inhibition of Vitamin K epoxide reductase
- Decrease of clotting factors
 - II, VII, IX & X
 - generalised bleeding disorder

Anticoagulants Mechanism of Action



The halting or severe reduction in vitamin K recycling means that a continuous source of the vitamin is essential to avoid a coagulopathy.

Administration of vitamin K produces a positive biochemical response within 24 hours.



Blood coagulation pathways affected by coumarin rodenticides

ANTICOAGULANT TOXICITIES

CLINICAL SIGNS

- Dyspnoea
- Lethargy, weakness
- Coughing
- Pale mucous membranes
- Anorexia

ANTICOAGULANT TOXICITIES

Clinical Signs

- Vomiting ± blood
- Melaena - black tarry-like stools
- Haematuria
- Lameness

ANTICOAGULANT TOXICITIES

Clinical Pathology:

- One stage prothrombin test (OSPT)
 - Citrate tubes
 - submit blood of normal animal
- Activated partial thromboplastin time (APTT)

ANTICOAGULANTS

TREATMENT

- Depends on time of poisoning
- Depends on clinical signs of poisoning
- Vitamin K₁
- And symptomatic and supportive care as needed

ANTICOAGULANTS

TREATMENT

Serious Clinical Signs

- Symptomatic and supportive care
 - fluids
- Vitamin K₁ (IV in fluids or SC initially)
 - up to 3 - 4+ weeks for long acting (oral with fatty foods)
- ± Clotting factors or blood transfusions



Anticoagulants

SUMMARY

- Early decontamination
- Prolonged treatment (2nd G)
 - Monitor OSPT
- Anticoagulant rodenticide
 - Vitamin K₁
 - Treatment based on severity

ANTICOAGULANTS

KEY POINTS

Determine which product and how much was eaten

Decontaminate the animal if no clinical signs are present

Use an emetic if less than 4 hours from ingestion

Clinical signs may not appear for several days.

Animal may die suddenly from internal haemorrhage

nd 2nd generation poisoning like Brodifacoum will cause clotting problems for 30+ days

Vitamin K1 is the treatment of choice
(oral with a fatty meal)