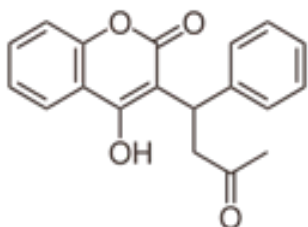


APES- LD-50 Activity

Name: _____

WARFARIN (also known under the brand names of Coumadin, Jantoven, Marevan, and Waran) is an anti-coagulant medication that is administered orally or, very rarely, by injection. It is also used as a pesticide against rats and mice.



Pesticide use

Coumarins, a class of drugs of which Warfarin is a member, are used as rodenticides for controlling **rats** and mice in residential, industrial, and agricultural areas. The active ingredient in rat poison is Brodifacoum, which is sometimes referred to as a Superwarfarin, because it is longer-acting than the drug Warfarin. It is both odorless and tasteless. It is effective when mixed with food **bait**, because the **rodents** will return to the bait and continue to feed over a period of days, until a lethal dose is accumulated (considered to be 1 mg/kg b.w./day over four to five days for Warfarin). It may also be mixed with **talc** and used as a tracking powder, which accumulates on the animal's skin and fur, and is subsequently consumed during grooming. The use as rat poison is now declining because many rat populations have developed resistance to Warfarin.

The LD50 is 50–500 mg/kg. The TD value is 100mg/kg.

Assignment:

Plot the following data for Warfarin Toxicity on *Semi-log graph paper*. **Label the LD50 and Threshold Levels of Toxicity-** mark each on the graph with a circle on the plot and label it clearly.

An experiment was conducted using varying concentrations of Warfarin on 6 groups of 100 Norway Rats.

WARFARIN CONCENTRATION %	NUMBER OF DEAD RATS	LIVE RATS
< 0.001	10	90
0.001	10	90
0.01	20	80
0.1	55	45
1	90	10
10	100	