

Basra University – Pharmacy College

Theor. Part of Toxicology Lab 4th st.

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**Toxicology
Times**

Lecturer

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Toxicity : the degree by which any compound :
drugs or chemicals



- Can produce undesired effects in living organisms human or animal
- Therefore, an important parameter which major toxicity of drug it is Lethal Dose50% (LD50 value).
- In toxicology, the median lethal dose, LD50 (abbreviation for "lethal dose, 50%")

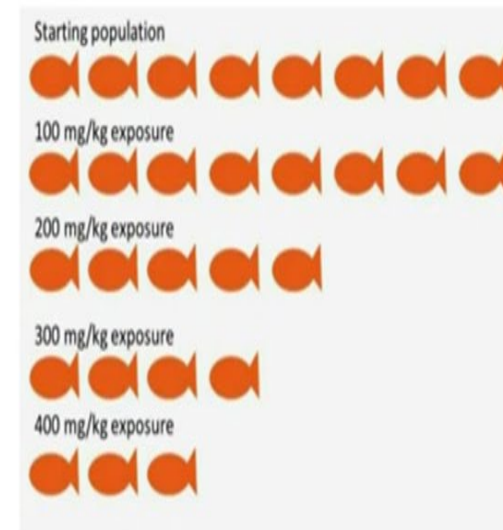


LD50 is a toxicity assessment method to determine the lethal dose of a substance required to cause death in 50% of test subjects

- It is one way to measure the acute toxicity of a substance.
- Acute toxicity: sudden violent syndrome caused by single large dose of toxicant with high mortality and sever toxic symptoms

Lethal dose 50%

Lethal dose 50% (LD_{50}) is the dose of a chemical that is lethal to 50% of the population of a particular species



Toxicologists can use many kinds of experimental animals but most often testing is done with rats and mice.



- The test substance must administered in graduated doses to several groups of experimental animals. It is usually expressed typically as milligrams of substance per kilogram of body weight. The most administration methods to find the LD50 value:
- Dermal (applied to the skin)
 - Oral (given by the mouth)
 - Intraperitoneal (given in the peritoneal cavity)



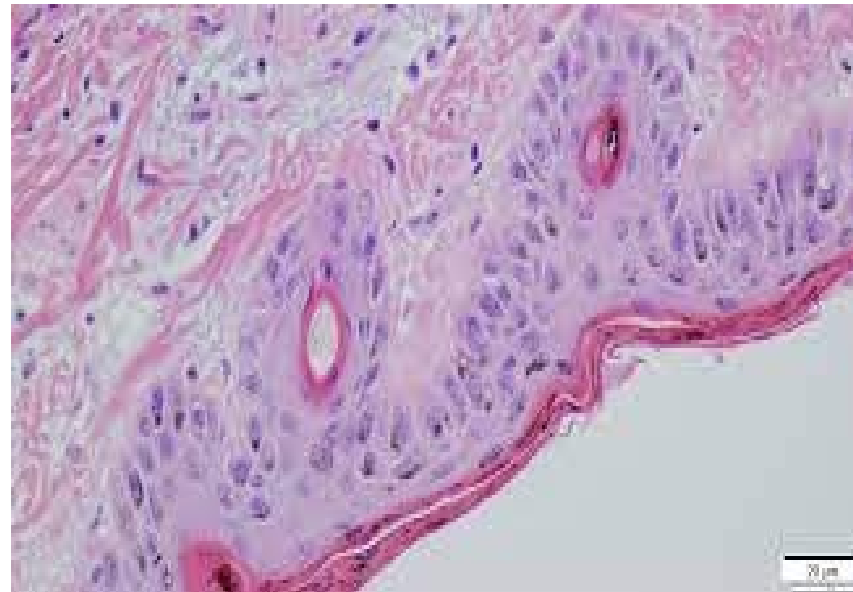
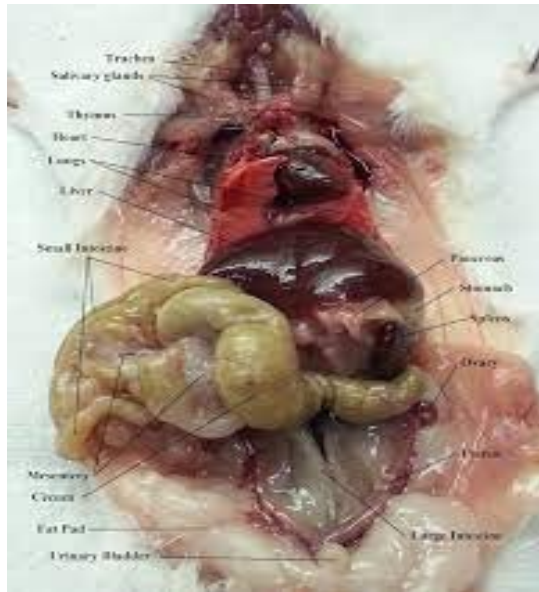
LD50 test involves :

- Administrating varying doses of a compound to a group of laboratory animals.
- Monitoring animals responses
- The dose that causes death in half of subjects is recorded as the LD50.



- Test animals should be observed closely for up to 14 days; symptoms of toxicity and recovery should be noted.

Gross and histopathological examination of the test animals at the end of the study may help identify toxic effects on target organs.



Reference :

Casarett & Doull's Toxicology – The Basic Science of
Poisons (6th edition

All the Best