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"Toxicology: The Science of Safety"

Potre Pooja, Thete Vaishnavi, Hanmante Manisha.

Corresponding author

Potre Pooja

SDMVM's college of pharmacy

Department of Pharmacy, SDMVM'S Dr.Vedprakash Patil Pharmacy College,
Chh. Sambhajnagar-431001 Dist. – Chh. Sambhajnagar, Maharashtra,India.

Abstract:

Compendium in toxicology care issues ranging from social toxicology and drug addiction to natural toxicology, toxicological studies of industrial and agricultural chemical household pharmaceuticals and countless other substances, law solutions and recommended standards for environmental tissues toxicity can result in death, malformations changes in reproductive e and growth performance, etc.

The main issues associated with the use of pesticides are bioaccumulation and biomagnificance. The effects of agents depend mainly on the dose, duration, and route of exposure. Toxicology is mainly divided into acute toxicity and chronic toxicity. Toxicology is the study of poisons, which can be any agent that can cause abnormalities in a living organism.

Keywords:

Toxicology, toxicity, biotransformation, detoxification, biomagnifications, pesticides.

Introduction:

This paper is supposed for toxicologists and different scientists who're non-experts in metabolism and unexpected with flavor aspect protection assessment. This aspect protection assessment. Toxicology deals with poisons and poisonings and has an ancient and venerable history. A poison can be any chemical or physical agent natural or man-made that causes unwanted changes in a biological system which can be human, plant, animal, algae, fungi and bacteria. Toxicology is a branch of science concerned with determining the acceptable dose of a chemical compound such as a drug or poison. This is an ancient concept because our ancestors were able to identify poisonous or non-poisonous plants. Eber's Papyrus Roll is the best example with 877 references and 400 remedies for the treatment of various diseases (Wilson. Toxicology studies compounds, methods, actions and detection of poisons on, or off the plate we encounter in our daily lives.

History of Toxicology:

Aureolus phillippus Theophrastus bombastys von hohenheim (paracelus)

- Father of modern toxicology
- “The dos makes the poison”

Mathieu Josweph Buenaventura Orfila (Aril 24, 178-March 12,1883)

- Was a Spanish born French toxicologist and chemist.
- The founder of the science of toxicology often called the father of toxicology.

Scope of Toxicology: Different branches

Biomedical:

- Mechanisms of actions
- Effects of exposure
- Understanding biological responses through model toxic compounds.

Public health:

- Recognition and identification of hazards
- Occupational exposure
- Development and use of pesticides

Environmental:

- Chemical effects on plants, animals & ecosystems.

Clinical:

- Recognition of exposure
- Development of antidotes & treatment

Regulatory:

- Detection methods
- Development of exposure standards

Definition

Toxicology is the science dealing with property action toxicity fatal dose detection, estimation of poisons& interpretation of the result of toxicological analysis.

Classification

Toxicology is broadly divided into different assess depending on

1. Research methodology
2. Socio-medical
3. Organ/specific effects

Types of toxicology

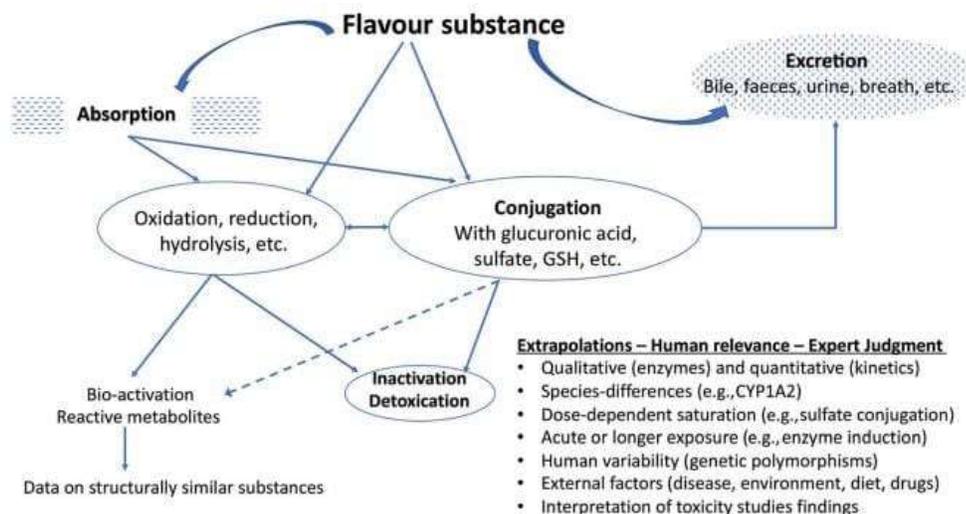
- I. Chemical toxicology
- II. Forensic toxicology
- III. Regulatory toxicology
- IV. Occupational toxicology
- V. Clinical toxicology
- VI. Environmental toxicology
- VII. Veterinary toxicology
- VIII. Aquatic toxicology

Advantages:

Easy to control exposure condition can measure a variety of effects can evaluate the role of host characteristics etc. (such as gender, age, genetic characteristics etc. and other regulatory factors diet etc) can evaluate and the mechanism.

Disadvantages:

Uncertainly associated with anima exposure versus human exposure. Controlled rearing conditions are on consistent with human reality patterns of concentration and time exposure differ significantly from human exposure. It is difficult to observe chronic toxic effects and cannot be used as the final basis for toxicity assessment and risk assessment.



Material methods:

The experimental data used in the work were previously used in a study by Sadik Patel [26] combined quantitative screening (qHTS) data with molecular biomarkers in the prediction of acute toxicity in mice. The qHTS data were generated by the National Toxicology Program and were originally obtained from the PubChem Bio Assay Data Base. The concentration of the substances varied between 0.6 and 92 μM and the response values related to the reduction of cell viability compared to the control group.

A home-built in silico algorithm [30], which has found many applications in recent studies [31,32] was used to generate protein interaction profiles for each substance from standard structures. The training set for the target prediction model obtained from (hEMBL). Version 14, contains more than 10 million biological compounds covering 9003 target compounds, all derived from the original manuscripts.

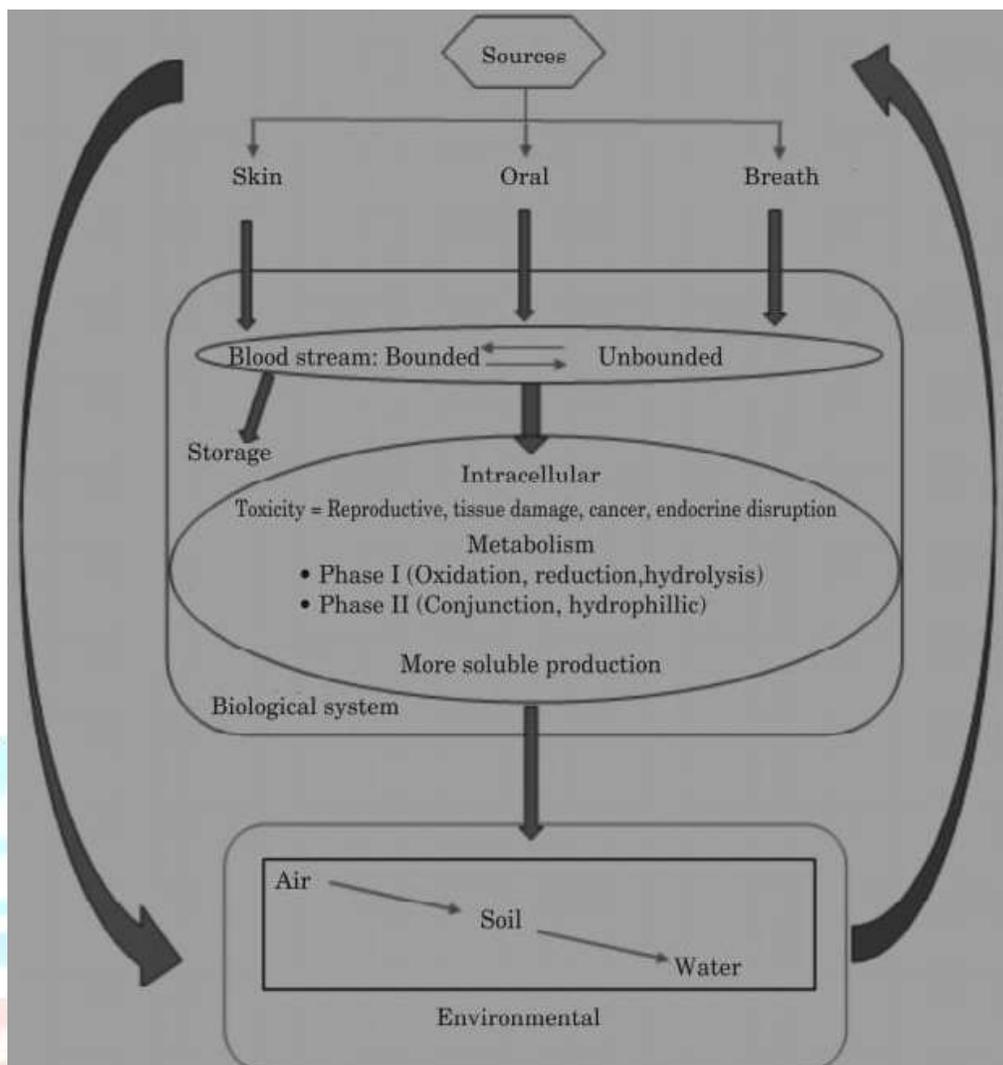
Market Formulation:

Brand name	Active ingredient	Manufacturer
Voltarol Emulgel	Diclofenac Diethylammonium	Novartis
Diclomax Emulgel	Diclofenac sodium	Torrent Pharma
Miconaz-H- Emulgel	Miconazole nitrate, Hydrocortisone	Medical union Pharmaceuticals
Dermafeet Emulgel	Urea	Herbitas
Isofen Emulgel	Ibuprofen	Beit jala pharmaceutical
Diclona Emulgel	Diclofenac diethylamine	Kuwait Saudi pharmaceutical
Dosanac emulsion gel	Diclofenac diethylammonium	Siam bheasach
Diclone Emulgel	Diclofenac diethylamine	Med pharma
Cataflam Emulgel	Diclofenac potassium	Novartis
Denacine Emulgel	Clindamycin phosphate	Beit jala pharmaceutical
Avindo Gel	Azithromycin	Cosme Pharmaceuticals

Bioaccumulation, Bioconcentration

Bioaccumulation is the uptake of substance through the mouth, skin, or lungs of an organisms and the subsequent

Concentration of that substance in the tissues of the organism. To a level that exceeds the concentration of the environment, a process by which the chemicals in the organisms increases and each step in the food chain.



Result:

The characterization results of the N-GQD AFM image shown in Figure 1A show that the height of the N-GQD is between 0.5 and 1 nm, which means that the nanosheet quasi-circular fan is the TEM image confirmed by AFM-measurement result (Figure 1B). The water-dispersed N-GQDs were measured to be 3 nm in diameter (Figure 2). 1C). The UV-Vis spectrum of N-GQD shows an absorption band at ca. 230 nm and the absorption surface is 390 nm (Figure 1D). The spectrum of N-GQD shows an absorption band at ca. 520 nm (Figure 1E). The FTIR characteristics of the N-GQDs confirm that they are N-doped with a low phase (Figure 1F). The bands at 1122 cm⁻¹ and 2982 cm⁻¹ were attributed to the asymmetric stretching of the C-N-C and C-H bonds of the dimethylamido group, respectively (Figure 1). 1F). The Raman spectrum of N-GQD shows a band D(1325 cm⁻¹) attributed to disordered carbon

Discussion:

Previous research has shown that high two-photon absorption, deep imaging, and good optical clarity make N-GQDs an alternative probe for good two-photon imaging in biological and medical applications. reported low toxicity of N-GQD at 5-400 mg/L In this study, there is evidence that N-GQDs are safe in an in vivo test system using *C. elegans*. Long-term exposure to N-GQDs (0.1-100 mg L⁻¹) from L1 larvae to adults did not cause death or reduce lifespan, nor did there is a noticeable change in the performance of one of the first.

targets and secondary organs in wild-type nematodes (Figure 2). Exposure to 5 to 10 mg kg⁻¹ had no toxic effects in rats. n topics

Conclusion:

Our in vivo results showed suggest that H-GQPS are not toxic to wild type and the examined mutant nematodes. We raise a hypothesis here that the normal physiological states of the intestinal barrier and defecation behavior may contribute greatly to the lack of translocation of H-GQDS into the secondary targeted organs and the progeny of exposed nematodes.

We have investigated the change of average external predictive power for toxicity of classification models using various combinations of chemical descriptions (derived from compounds structures and competed physiochemical properties). More importantly we found that H-GQDS would not be translocated into the secondary. Progeny of H-GQDS exposed wild type or examines mutant nematodes.

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