

Impact of toxicology on living organisms

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Toxicology could also be a science, overlapping with biology, pharmacology and medicine that involve the study of the adverse effects of chemical substances on living organisms and thus the practice of diagnosing and treating exposures to toxins and toxicants. The relationship between dose and its effects on the exposed organism is of high significance in toxicology. Some ask toxicology because the “Science of Safety” because as a field it's evolved from a science focused on studying poisons and adverse effects of chemical exposures, to a science devoted to studying safety.

The determination of the toxic effect of different chemicals upon living organisms is of interest to various groups of investigators. Consequently, the literature contains much information on the toxicity of various materials to animals and to plants. It is the purpose of this bulletin to present a relationship between the concentration of a poison and its physiological effect upon a wood destroying fungus and to point out that there seems to be a particular connection between the constitution of the chemical and therefore the rate at which the toxic effect changes with changes in concentration. The relationship between the concentration and the physiological effect of a poison also appears to be applicable to aphids, to bacteria, and to green plants.

FACTORS INFLUENCING TOXICOLOGY

Factors that influence chemical toxicity include the dosage, duration of exposure, route of exposure, species, age, sex, and environment. Toxicologists are experts on poisons and poisoning. There is a movement for evidence-based toxicology as a part of the larger movement towards evidence-based practices. Toxicology is currently contributing to the sector of Cancer research, since some toxins are often used as drugs for killing tumor cells. One prime example of this is often Ribosome Inactivating Proteins, tested within the treatment of Leukemia.

Not everyone will answer substances in just an equivalent way. Many factors, including the quantity and duration of exposure, an individual's susceptibility to a substance, and a person's age, all impact whether an individual will develop a disease or not. There are times during a person's life when he or she could also be more vulnerable to chemicals. These times may include periods of active cell differentiation and growth within the womb and in infancy, also as during adolescence, when the brain is constant to develop. Just because someone is exposed to a harmful substance, doesn't always mean they're going to get sick from it. The dose of the chemical or substance an individual is exposed to is another important think about toxicology. All substances have the potential to be toxic if given to humans and other living organisms in certain conditions and at certain doses or levels.

Toxicologists study the security and biological effects of medicine, chemicals, agents, and other substances on living organisms. They develop methods to work out harmful effects, the dosages that cause those effects, and safe exposure limits.

They may also investigate the connection between dose and effect, which may be influenced by factors like the dosing regimen (single large exposure vs. continuous smaller exposures), route of exposure (oral, dermal, nasal), age, gender, and environment.

Chemical toxicology may be a subspecialty of toxicology that focuses on the structure of chemical agents and the way it affects their mechanism of action on living organisms. It is a multidisciplinary field that has computational and artificial chemistry, additionally to people that concentrate on the fields of proteomics, metabolomics, drug discovery, drug metabolism, bioinformatics, analytical chemistry, biological chemistry and molecular epidemiology. It relies on technological advances to assist understand the chemical components of toxicology more comprehensively.

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