

TOXINS

Umarova Mahfuza Mirzakarimovna

*Assistant of the Department of Pharmacology, Clinical Pharmacology and Medical
Biotechnology*

Andijan State Medical Institute

Annotation: The human body is a self-cleaning system. This property is inherent in him by nature. But there may be a moment when its own reserves are depleted, and the body can no longer cope on its own. Then toxins begin to accumulate in it, which leads to the occurrence of any disease. This article describes toxicity, the most important types of toxins, and lethal doses.

Keywords: Toxin, toxicity, lethal dose, toxicant, poison.

ТОКСИНЫ

Умарова Махфуза Мирзакаримовна

Ассистент кафедры фармакологии, клинической фармакологии и медицинской
биотехнологии

Андижанский государственный медицинский институт

Аннотация: Человеческий организм - это самоочищающаяся система. Это свойство заложено ему от природы. Но может наступить момент, когда собственные резервы истощатся, и организм уже не сможет справиться самостоятельно. Затем в нем начинают накапливаться токсины, что приводит к возникновению любого заболевания. В этой статье описывается токсичность, наиболее важные типы токсинов и смертельные дозы.

Ключевые слова: Токсин, токсичность, смертельная доза, токсикант, яд.

Healthy is the most important value for all people, which must always be protected. But at this time, many people will make harmful causes for their body, for example, smoking, drinking different alcoholic products and eating which negatively affects their body. Because when using these products, a person always weakens his body and affects his body with various substances. But it is not this person who has always lived and lives surrounded by various of these substances called toxicants or toxins. These substances are not only in products, and they can even exist in other organisms, too, a person was and has always been in contact with these substances and organisms. A wide range of toxins are produced by plants (phytotoxins) and marine invertebrates. Orfila Mathieu Joseph Bonaventure (1814) wrote: "Poison is a substance that, in small quantities, when brought into contact with a living organism, destroys health or destroys life". Poisons in the industry are called toxicants. That's why poisons and toxins are classified as follows.

1. By origin: toxicants of natural origin; biological origin; bacterial toxins; vegetable poisons; poisons of animal origin; inorganic compounds; organic compounds of non-biological origin; synthetic toxicants.

2. According to the method of use by humans: pesticides; medicines and cosmetics; nutritional supplements; fuels and oils; solvents, dyes, adhesives; chemical synthesis by-products, impurities and wastes.

3. According to the conditions of exposure: environmental pollutants among (air, water, soil); professional toxicants; bit toxicants; bad habits and addictions (tobacco, alcohol, drugs, medicines; damaging factors in special conditions of exposure; emergency and catastrophic origin; chemical warfare agents.

Toxicity is a basic concept in modern toxicology. In a general form, toxicity can be defined as the property (ability) of chemicals, acting on biological systems in a non-mechanical way, to cause their damage or death, or, in relation to the human body, the ability to cause malfunction, disease or death.

Substances differ significantly in toxicity. The less a substance is capable of causing damage to the body, the more toxic it is (**Table 1**).

Table 1. Toxicity and molecular weight of some toxins

№	toxins	Producer	Mol.m	LD ₅₀ mg/kg (mol / kg)
1	Botulinum	Clostridium botulinium bacterium	$1,5 \cdot 10^5$	$2,6 \cdot 10^{-8}$
2	Tetanus	Clostridium bacteria	$1,4 \cdot 10^5$	$2,8 \cdot 10^{-8}$ $2 \cdot 10^{-16}$
3	Ricin	Castor oil plant Ricinus communis	$6,5 \cdot 10^4$	$2,8 \cdot 10^{-3}$ $4,3 \cdot 10^{-11}$

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