Journal of Nutrition & Food Sciences

OPEN ACCESS Freely available online

Commentary

Food and Chemical Toxicology Contaminant Mixtures and Synergic Toxic Effects in Human Cells

Elsa David*

Department of Nutrition and Dietetics, Chicago State University, USA

DESCRIPTION

Toxicology is a branch of science that overlaps with biology, chemistry, pharmacology, and medicine, and it involves the study of the harmful effects of chemical substances on living organisms, as well as the practice of diagnosing and treating toxins and toxicants. In toxicology, the connection between daily dosage and its effects on the exposed individual is extremely important. Chemical toxicity is influenced by factors such as dosage, duration of exposure (acute or chronic), route of exposure, species, age, gender, and environment. Scientists and doctors are poison and poisoning experts. As part of the larger movement toward evidence-based practises, there is a movement for proof toxicology. Toxicology is currently assisting in cancer research because some toxins can be used as drugs to kill tumour cells. Ribosome-inactivating proteins, which have been tested in the treatment of leukemia, are a prime example of this. The goal of toxicity assessment is to identify a substance's negative effects. Adverse effects are determined by two factors: I the route of exposure (oral, inhalation, or dermal), and ii) the dose (duration and concentration of exposure). Substances are evaluated in both acute and chronic models to investigate dose. In general, various sets of experiments are carried out to determine whether such a substance causes cancer and to investigate other forms of toxicity. Chemical toxicity is influenced by the following factors Dosage, The effects of large single exposures (acute) and frequent small exposures (chronic) are investigated, Exposure route, Ingestion, inhalation, or absorption through the skin, Other considerations, Species, Age, Sex, Health, Environment, Personal characteristics. The discipline of evidence-based toxicity testing strives to assess obtainable scientific evidence in a transparent, consistent, and objective manner in order to answer questions. Toxicology is the study of the harmful effects of chemical, physical, or bio weapons on living things and the environment, as well as their prevention and amelioration. Evidence-based toxicology has the ability to address toxicological concerns about the limitations of current approaches to assessing the state of science. These include concerns about judgment transparency, the synthesis of various types of evidence, and the assessment of bias and legitimacy. The foundations of evidence-based toxicology can be found in the larger movement toward evidence-based practices. Toxicity tests can be performed in vivo (on the entire animal), in vitro (on isolated cells or tissues), or in silico (in a computer simulation) Non-human animal testing is a traditional toxicology experimental tool. Galleria mellonella, which can replace small mammals, and Zebra fish, which allow in vivo toxicology studies in a lower order vertebrate, are two examples of model organisms. As of 2014, such animal testing provides information about how materials function in a living organism that is not available through other means. Some organizations oppose the use of non-human animals for toxicology testing for animal welfare purposes, and it has been restricted or banned in some circumstances in only certain regions, such as cosmetics testing. While animal testing continues to remain a method for determining human effects, there are both ethical and scientific concerns with animal testing.

CONCLUSION

Computer modelling of chemicals and proteins is an instance of an alternate solution testing method; using computer models of chemical compounds and proteins, structure-activity relationships can be ascertained, and chemical structures that are likely to bind to and interfere with proteins with necessary roles can be identified. Expert knowledge in molecular modelling and statistics, as well as expert judgment in chemistry, biology, and toxicology, is required for this work.

ACKNOWLEDGEMENT

None

CONFLICTS OF INTEREST

The author has no relevant financial or non-financial interests to disclose.

Correspondence to: Elsa David, Department of Nutrition and Dietetics, Chicago State University, USA, E-mail: davidelsa21@hotmail.com

Received: 31-August-2022, Manuscript No. jnfs-22-20201; **Editor assigned:** 02- September-2022, PreQC No. jnfs-22-20201 (PQ); **Reviewed:** 16-September-2022, QC No. jnfs-22-20201; **Revised:** 21- September-2022, Manuscript No. jnfs-22-20201 (R); **Published:** 28- September-2022, **DOI:** 10.35248/2155-9600.22.12.1000878

Citation: David E (2022) Food and Chemical Toxicology Contaminant Mixtures and Synergic Toxic Effects in Human Cells. J Nutr Food Sci. 12: 878.