COMMITTEE ON TOXICITY OF CHEMICALS IN FOOD, CONSUMER PRODUCTS AND THE ENVIRONMENT

Exploring Dose Response Workshop Report (reserved)

1. Advances in biology, computer science and other related fields are paving the way for major improvements in how we evaluate environmental and public health risks posed by potentially toxic chemicals. The combined advances in discovery and clinical sciences, data science and technology have resulted in toxicity testing which has reached a pivotal transformation point known as part of the 4th industrial revolution (4IR). One of the major recent scientific advancements is the development of alternative toxicity testing and computer modelling strategies for the evaluation of hazard and exposure.

2. The UK Food Standards Agency (UK FSA) and the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) held an "*Exploring Dose Response*" workshop in a multidisciplinary setting inviting regulatory agencies, government bodies, academics and industry. The workshop provided a platform from which to address and enable expert discussions on the latest *in silico* prediction models, new approach methodologies, physiologically based pharmacokinetics (PBPK), future methodologies, integrated approaches to testing and assessment (IATA) as well as methodology validation. Through case studies (including plastic particles, polymers, tropane alkaloids, selective androgen receptor modulators) the workshop outlined and explored an approach that is fit for purpose applied to health risk assessment in the context of future food safety assessment. Furthermore, possible future research to establish point of departures (PODs) using non-animal alternative models and to improve the use of exposure metrics in risk assessment was discussed.

3. Overall conclusions were as follows:
    a) The use of pragmatic guidelines / framework for incorporating these models into risk assessment. Using case studies like the ones outlined in the workshop should be used towards applicability and confidence in the models.
    b) Human biomonitoring data will be key to identify realistic snapshot of exposure scenarios as well as the big data which needs to be linked to human clinical data.
    c) Exposure data and exposure science will be key in developing *in silico* model in risk assessment and the explore the use of exposomics.
    d) There should be transparency throughout the process *i.e.* Consumer facing engagement on new approach methods.
    e) There should be planning to take forward these new methods using social sciences research and technical research for integration.

4. Ultimately, it was collectively agreed that integration of these new technologies as part of our risk assessment methodologies with a validation process

throughout will be key in the acceptance of the models (by regulatory bodies) and will be fundamental in the future of human and environmental safety.

Questions for the committee

i) Does the workshop report capture the *Exploring Dose Response Workshop* and its outputs?
ii) Have the different sessions of the day been adequately summarised, or would you like more/less information in certain aspects?
iii) Can you draw out any major conclusions from each section?
iv) Would you like to include any other materials?
v) Would you like to revise it and put it on the website as a COT statement (subject to comments on structure and content) and/ or focussing on any particular areas?
vi) Would you like it as a write up for a journal?
vii) Would you like to include any other materials?

Secretariat

June 2020

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This Annex is not yet publicly available as it contains pre-publication information.

Secretariat

June 2020