Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment

Potential future discussion items – horizon scanning

Background

1. The Committee Terms of Reference specify *"*To advise at the request of" (……government departments). Therefore, the work of the Committee is primarily reactive and the agendas are set by the Secretariat based upon the need for advice from Government Departments and Agencies particularly, but not exclusively, the Food Standards Agency (FSA) and the UK Health Security Agency (HSA).

2. The Code of Practice for Scientific Advisory Committees (Office of Science and Technology, December 2001), specifies that "committees should ensure that they have mechanisms in place that allow them to consider on a regular basis whether new issues in their particular areas of responsibility are likely to emerge for which scientific advice or research might be needed".

3. Members have agreed that it would be useful to have an annual agenda item to discuss potential future topics. The list of topics is displayed on the Committee's website here.

4. As Members are aware, now that the UK has left the European Union and the authorisation of regulated products that would have been done by EFSA is being done in the UK. Three Joint Expert Groups (JEGs) have been established to cover the authorisation of regulated products and these will be over seen by the COT who will provide challenge, comment and assurance of their work. This will inevitably affect the future agendas of the Committee, although it is unclear as yet how much

Committee time this will represent as the first authorisations are still progressing through the authorisation process.

Agenda items for 2022

Ongoing items

5. There are a number of ongoing items, either on the current agenda or scheduled for further discussion at a future meeting:

- COT input into the Scientific Advisory Committee on Nutrition (SACN) review of the maternal diet.
- Biologically based food contact materials.
- Microplastics -inhalation
- Dioxins
- Nicotine pouches

6. The FSA has a substantial programme of surveys to monitor the safety and quality of food. Details of these are available on the FSA website here.

Where appropriate, the Committee's advice will be sought on the health implications of the results. The Secretariat is not aware of any surveys likely to be received in the near future.

Upcoming items

UK HSA

7. A scoping paper on aircraft cabin air is planned for the March 2022 COT meeting, with further papers likely to come later in the year

Regulated products

8. As noted above, the Committee will be providing support, challenge and final sign off for the assessments of three JEGs on Food Contact Materials (FCM JEG), Food Additives, Enzymes and other Regulated Products (AEJEG) and Animal Feed and Feed Additives (AFFAJEG). However, ad hoc risk assessment advice may also be needed on other regulated products that are outside of the scope of the three JEGS this could be on supplements, foods for special groups or reference points for non-authorised veterinary medicines.

Proposed Workshops

9. Following discussions at the December meeting, it was agreed that a workshop on “Chemicals and food regulation in the UK- current structure and future development and divergence’ should be held. It is hoped this will take place in July.

10. Members agreed that a future workshop covering Food Contact Materials would be useful to ensure that the Committee kept up with developments in the industry. The potential topic of the microbiome remained under review pending future developments in the field.

Potential discussion topics

UK HSA

Phosphate-based flame retardants

11. Phosphate-based flame retardants (PFRs), otherwise known as organophosphate esters, show some structural similarity to other classes of organophosphates, such as organophosphate (OP) pesticides, which have been shown to interfere with neurodevelopment by cholinergic and noncholinergic (serotonergic and dopaminergic) pathways (Pope, 1999). In 2019, the COT published a statement on phosphate-based flame retardants (PFRs) and the potential for neurodevelopmental toxicity.

12. The conclusion of the statement was that 'the available evidence indicates that PFRs do not pose a risk of developmental toxicity at anticipated exposure levels. Overall, the Committee determined that the experimental evidence suggested that PFRs were different from other OPs in terms of their chemical and biological activity and therefore PFRs would not be expected, de facto, to show the same neurotoxicological effects as other OPs. No experimental data on the developmental neurotoxicity of PFRs were identified. The experimental data retrieved did not provide evidence in support of any OP-related mode of action for developmental neurotoxicity of PFRs. However, the available epidemiological studies, albeit limited, provided some evidence for neurodevelopmental effects in exposed populations. Limitations in this evidence included study design and a lack of specificity in the relationships identified. The Committee concluded that PFRs were very unlikely to share the neurodevelopmental effects of other OPs but could not exclude the possibility that PFRs could produce neurodevelopmental toxicity by some other mechanism' (COT Statement 2019/04).

13. Recently, the COT has become aware of new data relating to PFRs and developmental neurotoxicity (Patisaul et al., 2021). Therefore, previous literature searches have been replicated to capture this and any other new data.

14. Four papers addressed the relationship between PFRs and behavioural effects, including attention-deficit disorder (Choi et al., 2021), behavioural and cognitive development (Doherty et al., 2019a, 2019b) and intelligence (Percy et al., 2021) following maternal exposure during pregnancy, and one paper investigated the correlation between exposure via house dust and behaviour (Sugeng et al., 2021). With the exception of Percy et al. (2021), which failed to show an association between exposure to a mixture of organophosphate esters during pregnancy and child cognition, the other papers suggested exposure to PFRs correlated with adverse developmental outcomes. One mechanistic in vitro paper was also retrieved that investigated the potential underlying pathways associated with developmental neurotoxicity of PFRs.

15. Although not related to neurodevelopmental toxicity, several other papers reported an association between exposure to organophosphate esters during

pregnancy and adverse pregnancy outcomes such as infant anthropometry (Crawford et al., 2020), metabolic disruption (Kuiper et al., 2020), low birth weight (Luo et al., 2020; Luo et al., 2021) and spontaneous abortion (Zhao et al., 2021).

Questions for the Committee

16. Does the Committee wish to take this forward for further consideration as a discussion paper? If so, should the scope of the discussion paper focus on neurodevelopmental toxicity or should it be widened to adverse pregnancy outcomes in general?

Consultations of the European Food Safety Authority (EFSA)

17. EFSA frequently consults on draft documents on issues of generic relevance across its remit, or that are particularly high profile. When these have been of particular importance to the Food Standards Agency, the COT has been invited to respond to the consultation. As Members are aware, there will be an extraordinary COT meeting to discuss the draft EFSA opinion on Bisphenol A (BPA). There are no upcoming consultations currently listed on the EFSA website.

Items carried forward from previous horizon scanning

18. A number of items were carried over from horizon scanning in 2020 and 2021. These include:

- Approaches to the risk assessment of residues of human pharmaceuticals.
- The exposome
- Developments in dietary risk assessment

UK benchmark dose (BMD) modelling guidance

19. During discussions on the EFSA nickel update “it was considered that UK guidance on BMD modelling was needed to ensure consistency in software use and in interpretation of the outputs”.

20. Whilst carrying out its normal functions the COT is likely to come across instances where it will be essential that there is a good understanding of BMD modelling, including when it should be used; the software available and its respective limitations; and interpretation of the outputs. The secretariat, in addition may also need to know how to carry out the modelling. In order that there is consistency in all of these aspects it is essential that there is guidance from a UK perspective.

21. A COT (or wider UK) guidance document should be put together which would detail all of the above recommendations and also list relevant resources with links. Discussions with experts in-the-field would likely be necessary to ensure that the guidance is accurate, reliable and future-proof for the FSA and the COT.

22. At the December 2022 meeting, the possibility of a workshop on BMD modelling was considered but it was agreed that a discussion paper would be most appropriate in the first instance.

New topics

Obesity Risk Associated with Dietary Antibiotic Residues

23. Obesity is currently one of the greatest challenges to global public health (WHO, 2021). In England in 2015, 63 % of adults were classed as being overweight (having a body mass index (BMI) >25) or obese (a BMI >30), with 19.8 % and 14.3 % of children classed as overweight and obese in 2015-2016, respectively (PHE, 2017). Obesity increases the risk of a range of diseases and is responsible for an estimated 30,000 deaths in England per year (PHE, 2017). It has been suggested that one contributor to the current obesity ‘epidemic’ may be antibiotic exposure (Ternak, 2005; Riley, Raphael and Faerstein, 2013; Del Fiol *et al*., 2018). Antibiotics are commonly used in human medicine, cosmetics and cleaning products (Del Fiol *et al*., 2018). However, most antibiotics (65 % by weight) produced worldwide are used

in veterinary medicine and may contaminate meat and other animal products (Bbosa and Mwebaza, 2013, cited in Gelband *et al*., 2015). Since 75 % of antibiotics administered to animals are not absorbed, most pass into the environment in faeces and urine, where they contaminate soil and drinking water (Chee Sanford *et al*., 2009). Other contributors to the environmental antibiotic burden include antibiotics from crop spraying, hospital wastewaters and discarded medications (Del Fiol *et al*., 2018).

24. Since the 1940's, it has been widely recognised that antibiotics can be used in agriculture for growth promotion purposes (Del Fiol *et al*., 2018). When incorporated into animal feed at sub-therapeutic doses, they can increase the weight of the animal by up to 15 % (OECD, 2015). This effect appears to be mediated by a shift in the predominance of the intestinal microbiota (dysbiosis) towards microorganisms providing a greater capacity to metabolise nutrients from the diet, thereby promoting fat deposition (Del Fiol *et al*., 2018). Several experimental studies in regular and germ-free mice support the idea that antibiotics may promote obesity by triggering dysbiosis (reviewed by Del Fiol *et al*., 2018). Several studies have also related changes in human weight seen during the development of obesity to changes in the proportions of the bacterial phyla Firmicutes: Bacteroidetes (reviewed in Del Fiol *et al*., 2018). Significantly, the methods currently used by the European Medicines Agency (EMA) to establish acceptable daily intake (ADI) values for veterinary antibiotics are based on disruption of the intestinal barrier and potential to provoke antimicrobial resistance (AMR) (EMA, 2019). Therefore, they do not necessarily capture changes in the microbiota which may be associated with weight gain.

25. There is evidence to suggest that antibiotic exposure may affect human weight in a similar way to that of animals. Results from controlled epidemiological studies involving 368,360 children have associated early-life exposure to prescription antibiotics with weight gain (Del Fiol *et al*., 2018). Similarly, in the US, there is a strong positive correlation between antibiotic prescription rates and obesity indicators, with a Pearson correlation coefficient of 0.76 (Del Fiol *et al*., 2018). It has even been suggested that there may be a relationship between the widespread use of antibiotics over the past 70 years and the concurrent rise in obesity rates (Ternak, 2005; Riley, Raphael and Faerstein, 2013). While much of this research has been

based on therapeutic doses of antibiotics, their ability to promote weight gain in animals at sub-therapeutic doses may warrant further investigation as to the effects of low-dose exposure on the human population (Riley *et al*., 2013).

26. While the use of sub-therapeutic doses of antibiotics in animals for growth promotion purposes is banned in the EU, it continues to be practiced in the US and other parts of the world (O'Neill, 2015).

27. VMD colleagues have advised that the exposure data in this area may be limited and the Secretariat consider that support would be needed from colleagues with expertise in microbiology.

Question for the Committee

28. Does the Committee consider that this should be taken forward as a potential discussion item? If so, do Members have any comments on what should be considered?

COC and COM horizon scanning

29. The Annual horizon scanning paper for COC and its accompanying minutes are attached at Annex A for Members information. The priority topics agreed at the horizon scan in November 2020 were:

- Maintain a watching brief on factors affecting cancer susceptibility including shift work, stress and other lifestyle factors and how that might affect assessment of chemicals and carcinogenicity.
- Consider an update to guidance on assessment of nanomaterials, possibly as a joint activity across COC, COM and COT
- Gain awareness of the potential effects of antibiotics and antivirals on the microbiome
- Consider a joint discussion with COM on thresholds for in vivo mutagens and whether there is new information subsequent to the 2010 COM opinion

30. The COM have not had a formal horizon scan recently. Issues are identified as they arise during the consideration of test guidelines – resulting in a live document. The minutes of the most recent meeting are attached at Annex B to this paper. Possible future topics include genomics and next generation sequencing, and the use of genotoxicity markers in human biomonitoring.

Other Updates

FSA-funded Computational Toxicology Fellowship and LIDo PhD student in AI

31. The FSA and COT have been reviewing New Approach Methodologies (NAMs) to scope the best scientific methodologies available to be used in risk assessment of chemicals in foods and the environment, and understand how these can be incorporated in a regulatory context with validation approaches.

32. The FSA have recruited a computational toxicology fellow at the University of Birmingham and a PhD Student (London Interdisciplinary Doctoral Program-LIDo-TOX AI) at King's College London. The aims of the projects are to develop *in silico* tools (*i.e.* artificial intelligence machine learning) for toxicological prediction of chemicals through case studies and proof of concept studies. The fellow and student will also work alongside other government departments to understand how NAMs will improve indicative levels of safety in chemical risk assessment.

33. In addition, these new partnerships will help with networking, research collaboration, training opportunities and further our knowledge in this area. The fellowship and studentship also compliment the work set out in our UK Roadmap towards using new approach methodologies in chemical risk assessment.

FSA Research Programme

34. The FSA research strategy has seen the consolidation of all research in the portfolio into a series of programmes by area of research interest. The three

programmes most likely to involve matters that COT will be consulted on are “food hypersensitivity”, “chemical hazards in food and feed” and “cutting edge regulator”.

Balance of expertise on the Committee

35. It has previously been agreed that the following types of specialist expertise are required by the Committee for some or all of its evaluations:

Analytical techniques	Biochemistry
Bioinformatics	Cell biology
Clinical practice	Dietary exposure assessment
Endocrinology	Environmental exposure assessment
Epidemiology	Human toxicology
Immunology	Mathematical Modelling
Mechanistic toxicology	Molecular biology
Neurotoxicology	Nutrition
Paediatrics	Pharmacokinetics
Pharmacology	Probabilistic modelling
Reproductive toxicology	Respiratory toxicology
Risk assessment	Statistical aspects of experimental design
Statistics	Systems biology
Toxicogenomics	Toxicological pathology
Xenobiotic metabolism	

36. It would not be necessary to have an individual member for each listed expertise as some people would have a combination of the required skills. Additional key experts are also invited to attend meetings for specific topics to supplement missing knowledge.

37. Members are invited to comment on whether this list is still appropriate and if there are important gaps amongst the current membership or in light of possible future developments.

Questions on which the views of the Committee are sought

38. In addition to the questions in paragraphs 16 and 28, Members are invited to comment on each of the above areas and also to consider the following questions:

a. Do Members have additional suggestions for future topics for:

- Specific issues to be included as routine agenda items
- Focussed topics for one-day open meetings
- Generic issues requiring establishment of a Working Group.

39. Do Members have any proposals for research that FSA should fund in order to improve future COT risk assessments?

40. Do Members have any comments on the balance of skills on the Committee?

41. Members are reminded that they may draw particular issues to the attention of the Secretariat at any time.

Secretariat

January 2022

References

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Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment

Potential future discussion items – horizon scanning

COC Horizon scanning paper and accompanying minutes.

Secretariat
January 2022

Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment

Horizon scanning 2021

Introduction

1. The Committee's Terms of Reference indicate that the primary role of the Committee is to advise on the carcinogenic risk of substances to humans at the request of Government departments and agencies.

2. Since 2001, the Committee has undertaken a regular Horizon Scanning exercise, in line with the Code of Practice for Scientific Advisory Committees, in which the Secretariat and/or Members have suggested areas/topics that may need consideration in the light of new and emerging evidence relating to cancer risk assessment.

3. This paper presents a brief update on work from the last full horizon scanning held in November 2020 and an update on topics being considered by IARC and the EU Scientific Committees.

Topics from COC horizon scanning 2020

4. Below are the priority topics agreed at the horizon scan in November 2020:

- Maintain a watching brief on factors affecting cancer susceptibility including shift work, stress and other lifestyle factors and how that might affect assessment of chemicals and carcinogenicity
- Consider an update to guidance on assessment of nanomaterials, possibly as a joint activity across COC, COM and COT

- Gain awareness of the potential effects of antibiotics and antivirals on the microbiome
- Consider a joint discussion with COM on thresholds for in vivo mutagens and whether there is new information subsequent to the 2010 COM opinion

Joint horizon scanning topics

5. On 24th -25th November 2020, the COC and COM held a joint meeting to which COT members were also invited, and one of the discussion items was joint horizon scanning. From this discussion, the following topics were agreed and the Secretariats will consider how to progress these either as joint topics or which Committee might lead on these:

- Use of toxicogenomics/omics technologies in toxicity testing
- PBPK modelling – a COT workshop was held in December 2020.
- Next generation sequencing
- Further exploration of microplastics/microparticles and their composition – also linking with COMEAP
- Development of a dynamic cancer risk model, including consideration that pre-cancer effects are assessed as ‘general’ toxicity pathways, and other influencers on cancer/toxicity risk (e.g. shift work)
- Knowledge sharing across the three Committees, including impacts of EU Exit
- Consideration of uncertainty, use of uncertainty factors and margins of exposure – noting this also links with other activities.

New topics

6. The Secretariat does not have any specific suggestions for new topic areas to add to the horizon scan list – do Members?

COM and COT horizon scanning topics

7. The Committee has previously requested sight of the COM and COT horizon scanning activities. No further horizon scanning activities have occurred since the July 2021 COC meeting.

Work on NAMs

8. The COC has expressed interest in New Approach Methodologies (NAMs), which links in with a number of the horizon scanning topics. The Food Standards Agency and the COT held a workshop on this topic in October 2021, and there is an IGHRC/BTS workshop on NAMs on 22nd and 23rd November 2021.

Work following EU Exit and Transition

9. The Committee has asked to be kept up to date on relevant activities following EU Exit and the end of the transition period. There are no updates to report since July 2021

Further work on the OECD IATA for Non-genotoxic carcinogens

10. The COC has had a number of updates on the work under the OECD on an integrated approach to testing and assessment for non-genotoxic carcinogens. This work is ongoing, and there will be presentations on this at the IGHRC/BTS workshop on NAMs described in paragraph 8. In addition, papers are being published in a Special Issue of the International Journal of Molecular Sciences: https://www.mdpi.com/journal/ijms/special_issues/NGTxC. Two papers published so far are attached for Members at Annex A.

Upcoming IARC meetings

11. IARC have three upcoming meetings on their website with respect to the Monograph series (https://monographs.iarc.who.int/iarc-monographs-meetings/):

- Meeting 131 (8-15 March 2022) is on:
    - Cobalt Metal (CAS No. 7440-48-4) (without Tungsten Carbide or other metal alloys) and Cobalt (II) Salts

    - Trivalent and Pentavalent Antimony
    - Weapons-Grade Tungsten (with Nickel and Cobalt) Alloy (CAS No. None)
- Meeting 132 (7-14 June 2022) is on:
    - Occupational Exposure as a Firefighter

Upcoming EU Scientific Committee topics

12. The agenda and minutes of recent EU Scientific Committee on Consumer Safety (SCCS) Plenary meetings are attached in Annex B. SCCS has working groups on:

- Cosmetic Ingredients (last meeting 05-06/10/2021)
- Nanomaterials in Cosmetic Products (last meeting 16/09/2021), and
- Methodologies (last meeting 28/05/2021).

13. The agenda and minutes of recent EU Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) Plenary meetings are attached in Annex C. SCHEER has working groups on:

- Aluminium in toys (last meeting 27/09/2017)
- Anaerobic biodegradation of linear alkylbenzene sulphonates (last meeting 03/02/2020)
- Safety of breast implants in relation to anaplastic large cell lymphoma (last meeting 10/03/2021)
- E-cigarettes (last meeting 28/04/2021)
- Certain organic chemicals emitted from squishy toys (last meeting 08/04/2021)
- Safety of Cobalt in toys (last meeting 14/09/2021)
- Draft Environmental Quality Standards for the Water Framework Directive Priority Substances & groundwater quality standards (last meeting 13/10/2021)
- Electromagnetic fields (EMF) (last meeting 07/10/2021)
- Emerging environmental risks (last meeting 11/09/2018)

- Emerging issues at the environment-social interface (last meeting 04/07/2019)
- Fuel marker (last meeting 09/01/2019)
- Nuclear taxonomy (last meeting 28/06/2021)
- Guidelines on the benefit-risk assessment of the presence of phthalates in certain medical devices (last meeting 05-06/06/2019)
- Guidance on the structure and contents of SCHEER opinions (last meeting 17/06/2016)
- Potential risks to human health of light emitting diodes (last meeting 02/03/2018)
- Non-human primates testing (last meeting 02/05/2017)
- Onshore hydrocarbon exploration and production in the EU (last meeting 24/09/2018)
- Safety of PIP silicone breast implants (last meeting 10/10/2017)
- Rapid risk assessment (last meeting 26-27/11/2019)
- Sunbeds (last meeting 24-25/10/2016)
- Titanium dioxide in toys (last meeting 28-29/09/2021)
- Tobacco additives (last meeting 24/06/2016)
- UVC lamps (last meeting 18/01/2017)
- Weight of evidence and uncertainties (last meeting 08/02/2018)
- Water Framework Directive (last meeting 01/06/2017), and
- Water reuse (last meeting 12/05/2017).

14. The European Food Safety Authority has a substantial body of work across its Scientific Committee and Panels. More detail is available here: https://www.efsa.europa.eu/en/science/scientific-committee-and-panels. EFSA currently has open consultations on a number of substances, and also on methodological questions. The full list of open consultations is here: https://connect.efsa.europa.eu/RM/s/publicconsultation. Expected upcoming consultations are here: https://connect.efsa.europa.eu/RM/s/publicconsultation?PublicConsultation2__c-filterId=00B1v000009eNnNEAU .

Balance of expertise on the Committee

15. The balance of expertise required by the Committee, as confirmed at the last horizon scan in 2019, is provided in Annex C. It is not anticipated that individual members are required for each aspect of expertise as some people would have a combination of the required skills. Additional key experts can also be invited to attend meetings for specific topics to supplement missing knowledge within the Committee.

Questions for the Committee

16. Members are asked to consider the list of topics from 2020 and other aspects summarised and in particular:

a. Are there any additional topics of interest or importance which the COC should consider?

b. Whether the balance of expertise template is still appropriate and if there are any important gaps amongst the current membership or in light of possible future developments

Secretariat
November 2021

Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment

Horizon scanning 2021

Two published papers from the Special Issue of the International Journal of Molecular Sciences:

Desaulniers D, Vasseur P, Jacobs A, Aguila MC, Ertych N, Jacobs MN. Integration of Epigenetic Mechanisms into Non-Genotoxic Carcinogenicity Hazard Assessment: Focus on DNA Methylation and Histone Modifications. International Journal of Molecular Sciences. 2021; 22(20):10969. Doi:10.3390/ijms222010969 IJMS | Free Full-Text | Integration of Epigenetic Mechanisms into Non-Genotoxic Carcinogenicity Hazard Assessment: Focus on DNA Methylation and Histone Modifications (mdpi.com)

Sovadinová I, Upham BL, Trosko JE, Babica P. Applicability of Scrape Loading-Dye Transfer Assay for Non-Genotoxic Carcinogen Testing. International Journal of Molecular Sciences. 2021; 22(16):8977. doi:10.3390/ijms22168977
IJMS | Free Full-Text | Applicability of Scrape Loading-Dye Transfer Assay for Non-Genotoxic Carcinogen Testing (mdpi.com)

Available: IJMS | Special Issue : Advances in Mechanism Based Toxicity and Hazard Assessment of NGTxC Chemicals (mdpi.com)
These papers are attached. They are not being made publicly available for copyright reasons but can be accessed via the link provided.

Secretariat
November 2021

Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment

Minutes of the meeting held at 10.30 am on Thursday 18th November 2021 by Teams.

Item 6: Horizon scan 2021 (CC/2021/16)

17. No interests were declared for this item.

18. This paper presented the annual horizon scan for COC, including topics from previous horizon scanning sessions and updates on work of other groups, and outlining the balance of expertise on the Committee.

19. The expertise of the Committee was discussed especially taking into account a number of Members were now in their third term of office. Exposure assessment, in silico approaches and data integration were suggested as areas of expertise that could be required in the future. In addition recruitment of Lay Members would also be important in the near term, to keep up the good quality of those on COC presently. An exit review for Members leaving the COC was suggested. It had been proposed at a meeting of FSA Scientific Advisory Committee Chairs that consideration be made of bringing on scientists earlier in their careers to develop as Committee Members. A table was shown to the Committee with the expertise across Members and a version for COM and COT was requested to be clear on the spread of expertise across the three Committees, along with clarity on the remits of the three Committees. With respect to the template for COC provided in the Annex, it was suggested the sentence in the document about 3Rs was moved to a footnote.

20. The Committee was informed that the Secretariat is looking into the possibility of a joint meeting with COM at the March 2022 meetings, once the agenda for these meetings, as well as the format is clearer.

21. Topics suggested in the meeting included endocrine disruption and the link with carcinogenicity, acknowledging that endocrine disruption is also a COT remit; the impact of chemicals on potential for metastasis or progression of cancer, in particular with respect to the Hallmarks of Cancer and linking to the tumour microenvironment topic COC recently published on; communication of cancer risk and should COC be involved with this, especially with the move away from a yes/no decision on whether a substance is a carcinogen, and ensuring consistency in describing risks, possibly starting with a landscape review of terminology across a number of Committees (FSA and UKHSA) and led by Lay Members; ensuring appropriate considerations are made to acknowledging diversity in the population especially where there might be differences in risk between different groups.

22. It was suggested to provide more information within the horizon scan follow up papers in the future on topics covered by UK Committees as well as international groups.

Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment

Potential future discussion items – horizon scanning

COM minutes from their most recent horizon scanning discussion in June 2021.

Secretariat
January 2022

Item 5: Horizon Scanning

5a Forward look from the Chair

16. The Chair suggested two main areas of potential interest to the COM, which were genomics and next generation sequencing, and the use of genotoxicity markers in human biomonitoring. It was anticipated that in the next few years genomics and sequencing would be seen more in genotoxicity, including Duplex sequencing. There was a potential for this to support or even replace genotoxicity testing, particularly testing for gene mutation or point mutation. Developments in these areas may also provide an opportunity to gain more information from biomonitoring, occupational exposure or environmental exposure.

5b Presentation by HSE

17. Dr Lata Koshy gave a presentation on the work of the HSE post the UK exit from the EU. HSE are involved in a number of activities within UK REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals), which includes identifying hazards, such as mutagenicity, and identifying substances of Very High Concern (SVHC). Most of the HSE work on Classification, Labelling and Packaging regulation relates to hazard identification for industrial chemicals. The HSE is also involved in the regulation of biocides and pesticides. Additionally, the HSE produces summaries for ministers and HSE opinions on the mandatory classification of substances and whether to align with EU opinion. The future work programme of the HSE is still being worked out post EU Exit and will be limited by resource and recruitment. HSE anticipated that it would complete the evaluation of two to three active substances per year. Evaluation of mutagenicity is a key part in determining whether an active substance will be given approval. Mutagenicity is also a key factor in the UK review of new and existing substances and import tolerance for pesticides. Due to the short timeline, it may be difficult consulting with COM, which has three meetings per year.

18. Some key differences for HSE since the UK exit from the EU is that the HSE has to act in isolation from EFSA and ECHA and from that peer review process. Its

independence meant that it had to improve its own individual peer review process and has set up various expert groups and developed links with various other expert advisory groups. HSE may consult the COM in the future in relation to complex genotoxicity data sets and for advice in reviewing GHS for germ cell mutation category 1 and 2. The COM guidance documents and expert advice will be useful to the HSE and its advice on specific areas, for example, on mode of action/threshold mode of genotoxic action and the use of QSARs.

Government assessors

19. Assessors from other Government Departments and agencies were asked for any horizon scanning topics they wished to highlight. VMD had an interest in biopharmaceutical molecules and their potential for mutagenicity. VMD were not aware of any guidance on how to assess the mutagenic potential, for example, of modified stem cells or monoclonal antibodies, particularly those sourced from different species (e.g. xenogeneic stem cells). VMD may seek the view of the COM of this area in the future. BEIS noted that it had set up its own expert scientific advisory groups following UK exit from the EU and that it would be seeking to develop links with secretariats for other expert advisory groups, such as the COM.

20. Members of the COM were asked to send in any thoughts on horizon scanning topics to the COM secretariat.