

# Committee on CARCINOGENICITY

CC/MIN/2019/02

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

Minutes of the meeting held at 10.30am on Tuesday 16<sup>th</sup> July 2019 at Public Health England, Centre for Radiation, Chemical and Environmental Hazards, Harwell Campus, Didcot, Oxon, OX11 0RQ.

### Present

Chair: Professor D Harrison

Members: Mr D Bodey  
Dr G Clare  
Dr J Doe  
Dr R Haworth  
Dr D Lovell  
Professor N Pearce  
Dr L Rushton  
Dr R Waring

Secretariat: Miss B Gadeberg PHE Scientific Secretary  
Dr B Doerr FSA

Assessors: Dr O Sepai PHE

Invited Experts and Contractors: Dr R Bevan IEH Consulting  
Dr M Jacobs PHE

Observers: Professor L Levy IEH Consulting  
Ms A van der Zalm PETA International Science Consortium Ltd

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## **ITEM 1: Announcements and apologies for absence**

1. The Chair welcomed Members, and other attendees to the meeting. Apologies were received from Professor H Wallace and Dr R Kemp, and Dr D Gott (FSA Secretariat) who was represented by Dr B Doerr. Assessors Dr W Munro (FSS), Dr T Netherwood (DHSC), Dr H Stemplewski (MHRA), Mr I Martin (EA) and Ms S Geerts (DHSC) also sent apologies.
2. The Committee was informed that the Chair and Members Mr D Bodey, Dr G Clare, Dr J Doe, Dr R Kemp and Dr R Waring had been reappointed, with staggered terms of office to enable phased new appointments as Members come to the end of their third terms.
3. There were four vacancies on the Committee which be advertised in the late summer months. Members would be advised when the advert was available, and were asked to circulate to relevant contacts. Any relevant special interest groups should be notified to the Secretariat so they could be contacted.
4. Members were reminded to declare any interests they may have in an item before its discussion.

## **ITEM 2: Minutes of meeting held on 28<sup>th</sup> March 2019 (CC/MIN/2019/01)**

5. Minor amendments were made to the minutes of the March 2019 meeting.

## **ITEM 3: Matters arising**

### ***Item 3: Matters arising***

#### ***Draft statement on possible carcinogenic hazard to consumers from Insulin-like growth factor 1 (IGF-I) in the diet***

6. This statement had been published.

#### ***Draft statement from a joint committee workshop on the use of epigenetics in chemical risk assessment***

7. This statement was being finalised for publication.

### ***Guidance Statements***

8. All the main guidance statements had been published. The Introduction would be presented as preliminary text to the series and then the individual document descriptions presented alongside these.

### ***Update on FSA Scientific Advisory Committees***

9. Appointments to the FSA Scientific Advisory Committees were complete.

#### ***Item 6: First draft “Challenges for risk assessment of the effects of combined exposures to chemicals on carcinogenicity”***

10. It had not been possible to make the necessary amendments to this document in time for the present meeting. The paper was expected for November 2019.

***Item 8: Recent paper: Experimental and pan-cancer genome analyses reveal widespread contribution of acrylamide exposure to carcinogenesis in humans***

11. The Committee was informed that there had been little commentary on this paper. The link to a paper on mutational signatures had also been sent to Members for awareness in advance of the present meeting.

**ITEM 4: Update on OECD Integrated Approach to Testing and Assessment (IATA) on Non-genotoxic carcinogens – presentation by Dr Miriam Jacobs**

12. No interests were declared for this item.

13. An update of the work being undertaken on the OECD Integrated Approach to Testing and Assessment (IATA) of non-genotoxic carcinogens (NGTxC) was presented by Dr Miriam Jacobs (PHE). An expert group, convened in 2014 by OECD, was tasked with the development of an IATA approach as a pragmatic tool for the hazard and risk assessment of NGTxCs.

14. The group was set up following recognition by the OECD that the Cell Transformation Assay alone was insufficient to address NGTxC, and a more comprehensive batch of mechanistically-based and other relevant in vitro assays were required for hazard assessment. The remit of the IATA steering group was to identify key mechanisms and chemical applicability domain gaps, evaluate promising assays for inclusion in an IATA and, to design a framework in which the assays could sit.

15. Initial steps involved the reordering of the 'Hallmarks of Cancer' and associated modes of action, using AOP thinking from subcellular through to whole organism level. The resulting IATA was considered to be pragmatic, encompassing different current theories of cancer with a focus on key commitment steps leading to tumour outcome. Epigenetic mechanisms and genetic instability are included. The transition from adaptive to maladaptive physiology was to be targeted. The IATA is based upon different assay blocks to allow early, mid and late key events in the carcinogenic process to be identified, to obtain equivalent or better levels of information for human and environmental health than the rodent cancer bioassay. In addition, under the auspices of the OECD the IATA is intended to be globally applicable across different sectors and jurisdictions.

16. Current work is focused on the evaluation of assays for inclusion in a preliminary IATA and the readiness of these to enter the OECD Test Guideline (TG) programme. Key endpoints comprised: human relevant cancer biomarkers; immune response; inflammatory biomarkers; cytoskeleton modification; kinase activation. The importance of using non cancer derived cell lines, cell lines that can help identify human relevant cancer or inflammatory biomarkers, and 3D models to address the tissue component was highlighted.

17. As the COC guidance documents are currently being updated, the Committee considered how the IATA work might influence the COC guidance (in particular, the Overarching Summary, G01, and the Alternative to the 2-year Bioassay, G07). Clarification around the main issues being addressed by the initiative were sought

and whether this was agreed across all members of the IATA working group, which it is. The framework for the IATA is agreed.

18. A key step in the IATA was considered to be the detection of hyperplastic nodules which could serve as a predictor of potential carcinogenicity without going to the full tumour stage, as currently in the rodent cancer bioassay. It was also considered of importance to emphasise that one assay alone will not pick up all types of NGTxC and that should be acknowledged by the test method developers enabling transparent statements to be made on limitations of individual assays.

19. In conclusion, it was agreed that the presentation had been an excellent update on the scope and progress in this critical IATA, The COC would keep this under review and at appropriate timepoints in the IATA development discuss further how the project may influence the Committees guidance.

**ITEM 5: First draft revised Guidance Statement (G01): A Strategy for Risk Assessment of Chemical Carcinogens (CC/2019/09)**

20. No interests were declared for this item.

21. At the March 2019 meeting, a revised version of G01 was presented to the Committee (CC/2019/02) that indicated the updates needed. It was agreed that a full revision of the document was required going forward. This was to include a description of the evolving considerations around carcinogenicity, in addition to the testing strategies currently used.

22. A first revised draft of G01 that incorporated all suggested changes from the Committee was presented. It was agreed that the title of the document should be amended to reflect the evolving strategy section, with emphasis on human carcinogenicity, and not carcinogen identification per se. Additional areas for clarification and re-structuring were also discussed. It was agreed that a second draft version of G01 would be prepared and presented to the Committee at the meeting in November 2019.

**ITEM 6: Scoping paper on the synthesis and integration of epidemiological and toxicological evidence in risk assessments (CC/2019/10)**

23. No interests were declared for this item.

24. This scoping paper outlined a possible scope of work for a potential joint COT and COC subgroup on synthesis epidemiological and toxicological evidence which would build on the suggestions in the COT-COC Synthesising Epidemiological Evidence Subgroup (SEES) report.

25. The paper had been discussed at the July 2019 COT meeting. COT members had highlighted that EFSA currently have a working group on integrating epidemiological evidence, but noted that the addition with the proposed subgroup was integration of toxicological evidence. Overall the COT had agreed that a subgroup would be useful, and that some examples should be included in the output of the group.

26. Members discussed concern about duplicating work that has already been done or is currently being undertaken by others (EFSA, SEES) and also available approaches such as those of IARC. Concern was raised about the international push towards scoring systems for weighing/integration of evidence as some studies might rank low on the scoring systems yet would be important to consider in the overall conclusions on a weight of evidence basis. It was highlighted that the SEES report did evaluate the scoring process and highlighted its limitations. In that respect, an output similar to the SEES report but on integrating epidemiology and toxicology could be of value.

27. The Committee acknowledged that without guidance in place, there could be potential for issues with transparency, and possibly credibility, of how conclusions in Committee statements were reached. In particular, how expert judgment was applied and how data sets were brought together, especially when conflicts arise between epidemiological and animal data, or how uncertainty factors are applied in the derivation of HBGVs. It was noted by members, that EFSA (and COT) had been challenged on some of their decisions, however, Members did comment that the setting of reference values was not often done by COC.

28. The Committee concluded, that it would engage in the joint COT-COC proposal. However, some clarification was required before a subgroup was formed on problem definition and the knowledge gaps that the subgroup would be addressing and the form of output to generate, to avoid duplication of other work. To aid this some worked case studies would be helpful.

**ITEM 7: Development of a framework for consideration of risk due to less than lifetime exposure (CC/2019/11)**

29. No interests were declared for this item.

30. The COC has previously considered the issue of less than lifetime (LTL) exposure to genotoxic and non-genotoxic carcinogens. A set of principles that may be formulated into specific frameworks by individual Government departments and agencies was presented at the November 2018 (CC/2018/08) and March 2019 Committee meetings (CC/2019/04). The latter paper included an example flowchart for the risk assessment of retrospective and/or prospective LTL exposures.

31. A revised draft containing the amendments requested at the March 2019 meeting was presented (CC/2019/04) as, due to the nature of the amendments made, approval by Chair's action had not been considered appropriate.

32. Additional clarification of the 'flow-chart' was sought and for the drafting of a specific paragraph to reflect application of the decision process, should exceedances of the guidance value remain, following refinement of the risk assessment. It was agreed that this specific text would be drafted and sent to Committee members for approval. Following document revision, it was agreed that the final version could be approved by Chair's action. Further revisions and updates of the set of principles were foreseen in the future, consequent to any advances in the area.

**ITEM 8: Follow up to horizon scanning topics – July 2019 (CC/2019/12)**

33. No interests were declared for this item.

34. This paper presented the current list of horizon scan items and provided the standing update on activities at IARC and the EU Scientific Committees.

35. It was agreed that short taster presentations could be a useful means of the COC undertaking an initial exploration of a topic area to consider whether it might affect how risk of carcinogenicity is assessed. The Committee could then determine whether it should undertake more detailed assessment of the area. It was agreed that the immunological and stromal cell modulations and potent non-genotoxic carcinogens could be considered in this manner. In addition, Mendelian randomisation considerations in cancer epidemiology could be useful to keep a watching brief on with a short exploration. Members also requested an update research on lifestyle factors, obesity, diurnal effects and other stressors relevant to consideration of chemical effects on carcinogenicity.

36. With respect to considering in vitro systems, it was suggested that this should be broadened to cover in silico approaches, artificial intelligence, focussing on reduction, replacement and refinement and ensuring risk assessments focus on potential for human carcinogenicity. This was another topic that could have a short initial exploration.

37. The Committee were informed that in June the COM had held a meeting considering the future in genotoxicity assessment, and in particular issues around existing OECD guidelines, which the COC could be briefed on as appropriate in the future.

**ITEM 9: Any other business**

38. No other business was raised.

**ITEM 10: Date of next meeting**

39. The next meeting would be held on 7<sup>th</sup> November 2019, at PHE Chilton.