

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

COC Annual report 2023 - draft

1. The draft COC Annual Report 2023 is attached at Annex A.
2. Members are asked whether they have any comments or suggested changes for the draft.

**Secretariat
July 2024**

This is a background paper for discussion.
It does not reflect the views of the Committee and should not be cited.

CC/2024/04 Annex A

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

COC Annual report 2023 - draft

Draft report

**Secretariat
July 2024**

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

DRAFT

Preface



The Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC) evaluates chemicals for their potential to cause cancer in humans at the request of UK Government Departments and Agencies.

The membership of the Committee, agendas and minutes of meetings, and statements are all published on the internet (<https://www.gov.uk/government/groups/committee-on-carcinogenicity-of-chemicals-in-food-consumer-products-and-the-environment-coc>).

[To be updated]

Professor David Harrison
MD DSc FRCPath FRCPEd FRCSEd

COC Ongoing topics

Hydroxyanthracene derivatives

Following a request from UK-wide Nutrition Labelling Composition and Standards (NLCS) policy group, the UK Food Standards Agency (FSA) commissioned an independent view from the Committee on Mutagenicity (COM) on the mutagenicity of hydroxyanthracene derivatives (HADs) based on consideration of the European Food Safety Authority (EFSA) 2018 opinion on HADs and any additional new data that have become available. The genotoxicity of HADs used in foods had been discussed at the COM meeting in October 2021.

Overall, the COM agreed that the available evidence indicates that emodin, aloe-emodin, and dantron are genotoxic in vitro, namely from Ames tests. The COM agreed that the negative results from the in vivo bone marrow micronucleus assay are valid and concluded that there is reasonable evidence that there is no genotoxic effect or mechanism in vivo. Consequently, a new in vivo genotoxicity study would not be helpful. The COM considered that the reported carcinogenic effects of HADs, including those seen in the comet assay of colon cells, are caused by the high levels of irritation, inflammation, and diarrhoea.

This topic was referred to COC in 2022, and in 2023, the Committee discussed a first draft interim position paper, which also included a dietary and dermal exposure assessment. The interim position paper is expected to be published in 2024.

Lung adenocarcinoma promotion by air pollutants

In July 2023, the COC considered a paper for information on lung cancer promotion by air pollutants (Hill et al (2023). Lung adenocarcinoma promotion by air pollutants. Nature 616 (7955): 159-167).

The paper had also been discussed by the Committee on the Medical Effects of Air Pollutants (COMEAP) at its meeting on 10th July 2023, subsequent to a presentation from Professor Swanton at the November 2022 COMEAP meeting. COMEAP had noted a number of aspects where input from COC would be helpful, namely: COMEAP had queried whether mechanisms by which air pollution promoted cancers characterised by the EGFR mutation would also lead to promotion of other cancers initiated by mutations in other genes; the study did not rule out the possibility that air pollutants, e.g. PAHs, might also have an initiating role in addition to the mechanisms demonstrated in the paper; and in view of a continuing possibility of a cancer initiation role, COMEAP was unlikely to revise recommendations with respect to cessation lag used in mortality impact assessments, which assume that some of the benefits of air pollution reductions might not be realised until up to 20 years later.

The Committee noted that the study was a thorough piece of work covering many different aspects associated with carcinogenicity, in particular the cancer promotion and non-genotoxic mechanisms associated with cancer. It was noted that a number of papers are available from the 1970's and 1980's indicating cancer promotion as a

mechanism, i.e. it is not just direct genotoxicity that causes cancer, and as such this was not necessarily new science, but it was a detailed exploration of cancer in the context of air pollution.

It was noted that there was unlikely to be a complete absence of mutation occurring as a result of exposure to air pollution, and there are a number of papers on mutations associated with particulate matter. The particulate matter used in the study was low in PAHs content. It was noted that this might reduce the potential for genotoxicity. The COC agreed it would be useful to have a COM consideration of the topic. This is expected to be taken forward in 2024.

COC Workshop

The COC held a workshop in November 2023 as a follow up to the one in 2022 which aimed to determine what definitive steps can be undertaken to make progress towards improvement of the chemical risk assessment process and regulatory requirements for carcinogenicity, based on research undertaken over the last 10-20 years. The workshop considered issues in the context of consumer products, building on the considerations from the workshop on pesticides in 2022. The COC was joined at the meeting by representatives of the OPSS Scientific Advisory Group on Chemical Safety of Non-Food and Non-Medicinal Consumer Products (SAG-CS).

Dr Ruth Dempsey (COC Member and Science Speaks) presented a summary of the key points from the November 2022 workshop. This was followed by a presentation by Ms Frances Hill (OPSS) summarised the current regulatory approach for cosmetics and the responsibilities of industry in conducting cosmetic safety assessment. Ms Emma Meredity (Cosmetic, Toiletry and Perfumery Association Limited (CTPA)) then provided a summary of actions taken by industry as animal testing for cosmetic products has been banned in the UK and EU. A presentation was then given by Dr Carl Westmoreland (Unilever) providing illustrative examples of using next generation risk assessment and the aim of health protection rather than prediction of adverse effects. A final presentation from Dr Gina Hilton (PETA Science Consortium International) provided a summary of work undertaken in the Rethinking Carcinogenicity Assessment for Agrochemicals Project (ReCAAP), the development of an integrated approach to testing and assessment (IATA) submitted to the OECD and flagged the need to normalise new approaches to assessing carcinogenicity.

A number of key questions were then addressed in breakout discussion groups to answer the main theme questions:

- What opportunities are there to improve carcinogenic risk assessment in the UK?
- What is the future of the 2 year / lifetime bioassay?

The COC will consider the discussions at the two workshops further in 2024.

Joint session - Horizon scanning

COC and COM held a joint discussion session in October 2023 to discuss a new approach to undertaking horizon scanning for the Committees. Professor Jason Weeks (IEH Consulting) provided a facilitated discussion to consider emerging evidence, conducting a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, and then considered the external drivers for the aspects identified using a Social, Technological, Environmental, Economic, Political, Legal and Ethical (STEEPLE) analysis. An assessment was then made of the time point at which the main impacts of the issues identified (short-term: 1-3 years, medium-term: 4-10 years, long-term: 10+ years)

A series of potential work-streams were identified:

- a. It was agreed to develop a continuous programme of regular horizon scanning to identify and disseminate emerging issues (both positive and negative) on the short-, medium- and long-term horizons, with reporting at intervals to be agreed with the Secretariat;
- b. A method was agreed to assess and prioritise the importance/likelihood and impact of the emerging issues identified in [a] above;
- c. In the future a programme of deep dive studies will be developed to investigate the current state of science/evidence and possible future developments and determine the implications of issues identified as high priority (by respective committees).

COC input to COT work

Participation at COT workshop “Evolving Our Assessment & Future Guiding Principles Workshop”

Some COC members were invited to participate in the COT workshop described in section 1.194, and a presentation was given jointly by the COC and COM Secretariat on the guidance statements from these Committees.

A report of this workshop is anticipated to be published in 2024.

Public consultation on EFSA’S 2023 re-evaluation of the risk to public health from inorganic arsenic in food

COC members provided input by correspondence to the COT response to the public consultation described in section 1.73 above.

COC members commented on EFSA’s approach with respect to extrapolation of country-specific data to an international perspective, the response rate chosen for the

benchmark dose modelling, and the justification for not providing a steer on a margin of exposure of low concern due to lack of precedent with use of human data.

DRAFT