The IARC Monographs on carcinogenic risks to humans. Recent highlights and medium-term strategic planning on chemicals and pharmaceuticals

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The IARC Monographs identify causes of cancer in the human environment, including chemicals, mixtures, personal habits, drugs, biological and physical agents. Since its inception in 1971 the Monographs programme has evaluated over 950 agents, with more than 100 classified as carcinogenic to humans and over 300 as probably or possibly carcinogenic to humans. The process of causal inference used for IARC’s evaluations is laid out in the Preamble to the Monographs. International Working Groups of invited experts evaluate human, animal and mechanistic evidence and reach a consensus evaluation of carcinogenicity for each agent. First, human and animal cancer data are evaluated separately, with the weight of the evidence for causation being categorised as Sufficient, Limited, Inadequate, or Suggesting lack of carcinogenicity. For the overall evaluation of carcinogenicity, the Working Group considers the totality of the evidence and assigns agents to one of 5 causal groups: 1 Carcinogenic to Humans; 2A Probably carcinogenic to humans; 2B Possibly carcinogenic to humans; 3 Not classifiable as to carcinogenicity to humans, or 4 Probably not carcinogenic to humans. Mechanistic evidence has an increasing role in overall evaluations; it can be invoked to upgrade an evaluation, or, alternatively, strong mechanistic evidence for the absence of a relevant mechanism in humans can downgrade an evaluation based on animal cancer data. The Monographs’ evaluations constitute hazard identification, but the Preamble has scope for characterising risk quantitatively. The presentation will give an overview on strategic directions of the Monographs programme and use some recent evaluations to illustrate procedures.