

## Book review

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Vol. 82, Some Traditional Herbal Medicines, Some Mycotoxins, Naphthalene and Styrene**  
World Health Organisation, IARC Press, Lyon France, 2002, 590 pp., ISBN 92 832 1282 7, US\$40

This volume by the International Agency for Research on Cancer (IARC) deals with advances in our understanding of the chemistry and potential carcinogenic activity of herbal medicines based on *Aristolochia*, *Rubia*, *Morinda* and *Senecio* as well as some mycotoxins and two industrial chemicals, naphthalene and styrene. Each chapter on the herbs contains a short review of the traditional uses of the different species used in each genera, what is known about the chemistry of each species and then deals with the compounds that are either known or thought to be carcinogenic.

The chapter on *Aristolochia* contains information about the recent issues associated with renal failure that has occurred after people have taken preparations thought to contain *Aristolochia*. This form of renal failure has been called “Chinese herb nephropathy”, a term that is misleading as many herbs used in Chinese medicine do not cause renal toxicity. Renal failure is thought to be associated with aristolochic acids that occur in species of *Aristolochia*, thus this type of renal failure could be called “aristolochic acid-associated nephropathy”. This term would be better than “*Aristolochia* nephropathy”, another term being used as aristolochic acids are not restricted in their distribution to just species of *Aristolochia*. The sale of products that contain material from species of *Aristolochia* and substitutes in unlicensed medicines has now been prohibited in some countries such as Britain and Australia. This ban is in part due to cases of renal disease reported in Belgium when it is thought that a species of *Aristolochia* had been substituted for the aristolochic acid-free *Stephania tetrandra*. This chapter provides an overview of the toxicity of these acids.

Anthraquinones are the compounds usually associated with the carcinogenic activity of the laxatives

*Rubia tinctorum* and *Morinda officinalis*. The review of the data for *Rubia* suggests that at the moment there is inadequate evidence to support claims that laxatives containing anthraquinones from *Rubia* and *Morinda* cause cancer, although there is sufficient evidence from experiments undertaken on experimental animals that they could be carcinogenic.

The chapter on *Senecio* presents information about the bioactivity of pyrrolizidine alkaloids, especially riddelliine. However, although these compounds are known to be toxic to a range of animals the IARC monograph presents no data to show that riddelliine is toxic to humans. It is clear that more work should be undertaken on extracts containing these compounds to evaluate their potential carcinogenic activity if taken in high concentrations or over a period of time.

The chapter on aflatoxins provides an update on the earlier monograph published in 1993. This chapter provides a very good overview of recent literature on aflatoxins and an annex deals with management strategies available to decrease the contamination of food and feed by aflatoxin-producing fungi.

The information on the bioactivity and case reports that cite naphthalene and styrene as being toxic are informative, however, as yet there is inadequate evidence to support carcinogenic activity.

Overall, the monographs are well researched and the data presented clearly. This book would be of interest to a wide audience from those involved with the quality control of herbal medicines and food to those looking for a synopsis of the active compounds in the species covered in this volume. It is very clear from the monographs that further research is needed to evaluate the risks to humans of some of the bioactive compounds in medicinal plants and fungi.

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