

Regulatory Toxicology and Pharmacology

Vol. 35, No. 2, April 1, 2002

ISSN: 0273-2300

EISSN: 1096-0295

An Evaluation of the Possible Carcinogenicity of Bisphenol A to Humans

pp. 238-254 (doi:10.1006/rtph.2001.1525)

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(Received September 7, 2001; published electronically March 28, 2002)

Abstract

Bisphenol A (BPA) is a monomer component of polycarbonate plastics and epoxy resins. These resins are used in numerous consumer products, including food-contact plastics. There has been considerable scientific debate about the relevance to humans of reported estrogenic actions of BPA. Much less attention has been focused on the carcinogenic potential of BPA. The carcinogenic potential of BPA was assessed through a review of metabolic data, genetic toxicity studies, long-term toxicity/carcinogenicity studies, and estimates of consumer exposure. Following a weight-of-evidence approach as recommended by IARC and U.S. EPA, it was concluded that BPA is not likely to be carcinogenic to humans. The bases for this conclusion included: (a) the results of an NTP study which provided no substantive evidence to indicate that BPA is carcinogenic to rodents; (b) the lack of activity of BPA, at noncytotoxic concentrations, in standard *in vitro* genetic toxicity tests; (c) the lack of genotoxic activity of BPA in a GLP-compliant *in vivo* mouse micronucleus assay; and (d) the results of metabolism studies showing BPA is rapidly glucuronidated without evidence of formation of potentially reactive intermediates, except possibly at high doses that could saturate detoxication pathways. In addition, exposure assessment reveals that current use of BPA would result in only a trivial human exposure. © 2002 Elsevier Science (USA).

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