

Induction of sister chromatid exchanges by cypermethrin and carbosulfan in bone marrow cells of mice *in vivo*

1. [Sarbani Giri](#)³,
2. [Anirudha Giri](#),
3. [Gouri Dutt Sharma](#)² and
4. [Surya Bali Prasad](#)¹

[±]Author Affiliations

1. Genetic Toxicology Laboratory, Department of Life Science, Assam University, PO Box 11, Silchar 788 011, India and

2. ¹Cell and Tumor Biology Laboratory, Department of Zoology, North-Eastern Hill University, Shillong 793 022, India

- Received May 30, 2002.
- Accepted July 29, 2002.
- Revision received July 29, 2002.

Abstract

The public health effects of pesticides cannot be denied. However, the undesired effects of chemical pesticides have been recognized as a serious public health concern during the past decades. The present study describes the genotoxic effects of two pesticides, namely cypermethrin and carbosulfan, in a murine test system *in vivo*. The test parameter used was analysis of sister chromatid exchanges (SCE) in bone marrow cells. Both cypermethrin (5, 10 and 20 mg/kg) and carbosulfan (1.25, 2.5 and 5 mg/kg) induced significant increases in the frequency of SCEs ($P < 0.001$). However, no significant dose–response correlation could be found for either of the pesticides. Carbosulfan induced a cell cycle delay, as evidenced by an increase in average generation time accompanied by accumulation of cells in the first division cycle, but cypermethrin did not induce any such response. The present study indicates that carbosulfan has a higher potential to cause genetic alterations than cypermethrin in mice and may also pose a mutagenic risk to human beings.

- © UK Environmental Mutagen Society/Oxford University Press 2003

Articles citing this article

- **N2-Ethyldeoxyguanosine as a Potential Biomarker for Assessing Effects of Alcohol Consumption on DNA** *Cancer Epidemiol. Biomarkers* Prev. (2008) 17 (11): 3026-3032

- [Abstract](#)
- [Full Text \(HTML\)](#)
- [Full Text \(PDF\)](#)