

## CHRYSOIDINE (Group 3)

### A. Evidence for carcinogenicity to humans (*inadequate*)

A report of bladder cancer in three amateur anglers with exposure to chrysoidine-dyed maggots<sup>1</sup> stimulated reports of four further cases<sup>2,3</sup> and two case-control studies<sup>4,5</sup>. A study in Yorkshire, UK, used an existing large-scale bladder cancer case-control study (over 900 pairs) and made further enquiries regarding fishing, maggots and dyes used on or in the maggots. The relative risks were 0.7 (95% confidence interval, 0.2-2.3) based on five exposed cases for the use of bronze (surface-coloured) maggots, and 2.0 (0.6-6.2) based on nine exposed cases for yellow maggots (ready or self-coloured)<sup>4</sup>. A study in the West Midlands, UK, was smaller (202 pairs) but showed a higher percentage of use of dyed maggots (14% of cases, 8% of controls). A three-fold excess risk was noted for the use of bronze maggots for more than five years<sup>5</sup>. This study almost certainly included five cases from the previous case reports that stimulated the case-control studies, but this factor is unlikely to remove the statistically significant excess risk.

### B. Evidence for carcinogenicity to animals (*limited*)

Chrysoidine was tested for carcinogenicity in single experiments in mice and rats by oral administration only. In mice, it produced liver-cell adenomas and carcinomas, leukaemia and reticulum-cell sarcomas. The experiment on rats was inadequately reported<sup>6</sup>.

### C. Other relevant data

No data were available on the genetic and related effects of chrysoidine in humans. It was mutagenic to bacteria<sup>7</sup>.

## References

- <sup>1</sup>Searle, C.E. & Teale, J. (1982) Chrysoidine-based bait: a possible carcinogenic hazard to anglers? *Lancet*, *i*, 564
- <sup>2</sup>Massey, J.A., Feneley, R.C.L. & Abrams, P.H. (1984) Maggots dyed with chrysoidine. *Br. med. J.*, *289*, 1451-1452
- <sup>3</sup>Sole, G.M. (1984) Maggots dyed with chrysoidine: a possible risk to anglers. *Br. med. J.*, *289*, 1043-1044
- <sup>4</sup>Cartwright, R.A., Robinson, M.R.G., Glashan, R.W., Gray, B.K., Hamilton-Stewart, P., Cartwright, S.C. & Barham-Hall, D. (1983) Does the use of stained maggots present a risk of bladder cancer to coarse fishermen? *Carcinogenesis*, *4*, 111-113
- <sup>5</sup>Sole, G. & Sorahan, T. (1985) Coarse fishing and risk of urothelial cancer. *Lancet*, *i*, 1477-1479
- <sup>6</sup>IARC *Monographs*, *8*, 91-96, 1975
- <sup>7</sup>IARC *Monographs, Suppl. 6*, 176-177, 1987