3,3′-DICHLOROBENZIDINE (Group 2B)

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

Three retrospective epidemiological studies of workers exposed to 3,3′-dichlorobenzidine gave no evidence of carcinogenicity, but the studies were of insufficient quality or statistical power to permit confident exclusion of this possibility. Because 3,3′-dichlorobenzidine and benzidine (see p. 123) may be made in the same plant, 3,3′-dichlorobenzidine may have contributed to the incidence of bladder cancer attributed to benzidine[1].

B. Evidence for carcinogenicity to animals (*sufficient*)

3,3′-Dichlorobenzidine was tested for carcinogenicity in mice, rats, hamsters and dogs by oral administration, in rats by subcutaneous administration and in mice by

transplacental exposure. Following its oral administration, it produced liver-cell tumours in mice, hepatocellular carcinomas in dogs, mammary and Zymbal-gland tumours in rats and carcinomas of the urinary bladder in hamsters and dogs. Increased incidences of leukaemias were observed in rats following oral administration and in mice following transplacental exposure[1].

C. Other relevant data

No data were available on the genetic and related effects of 3,3′-dichlorobenzidine in humans. It has been reported to induce unscheduled DNA synthesis in cultured human cells. It was mutagenic to bacteria[2].

References

[1]*IARC Monographs, 29*, 239-256, 1982

[2]*IARC Monographs, Suppl. 6*, 226-227, 1987