

3,3'-DIMETHOXYBENZIDINE (*ortho*-DIANISIDINE) (Group 2B)

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

3,3'-Dimethoxybenzidine (together with 3,3'-dichlorobenzidine [see p. 193] and *ortho*-toluidine [see p. 362]) has been prepared in the same plants as benzidine (see p. 123) and may therefore have contributed to the bladder cancer risk associated with benzidine¹. No case is on record in the USSR of an occupational urinary bladder neoplasm produced solely by this compound².

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

Following its oral administration, 3,3'-dimethoxybenzidine produced tumours in rats at various sites, including the bladder, intestine, skin and Zymbal gland; it produced forestomach papillomas in hamsters³.

C. Other relevant data

3,3'-Dimethoxybenzidine has been found in the urine of workers exposed to it³.

No data were available on the genetic and related effects of 3,3'-dimethoxybenzidine in humans. It induced sister chromatid exchanges in Chinese hamster cells *in vitro* and unscheduled DNA synthesis in human cells and rat hepatocytes *in vitro*. It was mutagenic to bacteria⁴.

References

¹Clayson, D.B. (1976) Occupational bladder cancer. *Prev. Med.*, 5, 228-244

²Genin, V.A. (1974) Hygienic assessment of dianisidine-sulphate production from standpoint of carcinogenous hazard for workers (Russ.). *Gig. Tr. prof. Zabol.*, 6, 18-22

³*IARC Monographs*, 4, 41-47, 1974

⁴*IARC Monographs, Suppl. 6*, 262-263, 1987