

## IRON-DEXTRAN COMPLEX (Group 2B)

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

An early report was made of a woman who had developed an undifferentiated soft-tissue sarcoma following multiple injections of iron-dextran complex<sup>1</sup>. In a report on 196 cases of sarcoma of the buttock, four of 90 for whom records on drug use were still available had been given intramuscular injections of iron. In three of the cases, an interval of at least two years had elapsed<sup>2</sup>. A selective tendency to report receiving iron injections may have introduced bias. A review of reports during the period 1960-1977 indicated that nine malignancies had been described in five reports. Two were thought to have been foreign-body reactions to fat necrosis; one was a metastatic carcinoma at the site of an iron-dextran injection; and one was a reticulum-cell sarcoma with fractures of the pelvis possibly only coincidentally related to iron injections six years before. Several of the remainder were of different histological type<sup>3</sup>. Only one, a poorly differentiated spindle-cell fibrosarcoma, was believed likely to be related to iron-dextran injections given 14 years previously<sup>4</sup>. No further case report or epidemiological study is known to the Working Group. It seems probable that the considerable publicity given to the initial case report<sup>1</sup> and the tendency to give parenteral iron therapy intravenously may have considerably reduced human exposure to intramuscularly administered iron-dextran complex.

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

Iron-dextran complex has been tested in mice, rabbits and rats by repeated subcutaneous or intramuscular injections, producing local tumours at the injection site<sup>1,5</sup>. The Working Group noted that iron-dextran complex accumulates at the site of injection in rodents, in contrast to its rapid dispersal after injection in human beings.

### C. Other relevant data

No adequate data were available to the Working Group.

## References

<sup>1</sup>IARC *Monographs*, 2, 161-178, 1973

<sup>2</sup>Greenberg, G. (1976) Sarcoma after intramuscular iron injection. *Br. med. J.*, *ii*, 1508-1509

<sup>3</sup>Fielding, J. (1977) Does sarcoma occur in man after intramuscular iron? *Scand. J. Haematol., Suppl.* 32, 100-104

<sup>4</sup>Robertson, A.G. & Dick, W.C. (1977) Intramuscular iron and local oncogenesis. *Br. med. J.*, *i*, 946

<sup>5</sup>Hrubý, M. & Damková, E. (1985) Induction and transplantability of ferridextran tumours in inbred strains of *Rattus norvegicus* (Czech.). *Sbornik Lék.*, 87, 114-120