

CLOMIPHENE CITRATE (Group 3)

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

Only case reports of benign and malignant tumours occurring at various sites are available¹⁻⁵. These include testicular tumours in three young men who had received clomiphene as part of hormonal treatment for oligospermia², a hepatoblastoma in a female

infant whose mother had received clomiphene citrate as treatment for infertility³, a liver-cell adenoma in a women who had received clomiphene citrate for oligomenorrhoea⁴, and unilateral testicular neoplasms in two of 650 oligospermic men who had received monthly treatments with clomiphene citrate (daily for three weeks followed by a week of rest) for six to 12 months⁵.

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

Clomiphene citrate was tested in an inadequate experiment in newborn rats by single subcutaneous injection; reproductive-tract abnormalities, including uterine and ovarian tumours, were reported¹.

C. Other relevant data

No data were available on the genetic and related effects of clomiphene citrate in humans. It did not induce chromosomal aberrations or micronuclei in bone-marrow cells of mice treated *in vivo*⁶.

References

¹*IARC Monographs*, 21, 551-561, 1979

²Neoptolemos, J.P., Locke, T.J. & Fossard, D.P. (1981) Testicular tumour associated with hormonal treatment for oligospermia. *Lancet*, ii, 754

³Melamed, I., Bujanover, Y., Hammer, J. & Spierer, Z. (1982) Hepatoblastoma in an infant born to a mother after hormonal treatment for sterility. *New Engl. J. Med.*, 307, 820

⁴Carrasco, D., Barrachina, M., Prieto, M. & Berenguer, J. (1983) Clomiphene citrate and liver-cell adenoma. *New Engl. J. Med.*, 310, 1120-1121

⁵Nilsson, A. & Nilsson, S. (1985) Testicular germ cell tumors after clomiphene therapy for subfertility. *J. Urol.*, 134, 560-562

⁶*IARC Monographs, Suppl. 6*, 184-185, 1987