4,5′,8-TRIMETHYLPSORALEN (Group 3)

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

Malignant melanoma was diagnosed in a 30-year-old male shortly after commencement of treatment with 4,5′,8-trimethylpsoralen for vitiligo. No skin cancer was observed during two to 14 months of follow-up in 57 patients with psoriasis treated for one to 23 months with 4,5′,8-trimethylpsoralen[1].

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

No skin tumour was observed in mice given thrice-weekly skin applications of 4,5′,8-trimethylpsoralen followed by low doses of ultraviolet A irradiation for nine months[1,2].

C. Other relevant data

No data were available on the genetic and related effects of 4,5′,8-trimethylpsoralen in humans.

In combination with ultraviolet A radiation, 4,5′,8-trimethylpsoralen bound covalently to DNA in guinea-pig skin *in vivo*. It induced sister chromatid exchanges and unscheduled DNA synthesis in human cells *in vitro*, and DNA cross-links in human and rodent cells *in vitro*. It induced mutation in yeast and DNA damage in bacteria. Results on the induction of mutation in bacteria were inconclusive[3].

In the absence of ultraviolet A radiation, 4,5′,8-trimethylpsoralen did not induce sister chromatid exchanges in human lymphocytes *in vitro*; results for induction of unscheduled DNA synthesis were equivocal. Mutagenicity studies in bacteria were inconclusive[3].

References

[1]*IARC Monographs, 40*, 357-371, 1986

[2]Hannuksela, M., Stenbäck, F. & Lahti, A. (1986) The carcinogenic properties of topical PUVA. A lifelong study in mice. *Arch. dermatol. Res., 278*, 347-351

[3]*IARC Monographs, Suppl. 6*, 541-544, 1987