

5-METHOXYPSORALEN (Group 2A)

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

In a survey of 87 persons employed in the production of bergamot oil (of which 5-methoxypsoralen is a constituent), 19% of 79 exposed workers and 16% of a comparison group of 31 people resident in the same area were observed to have 'keratomas' or 'epitheliomas' of the skin. Possible confounding effects of age, sex and outdoor employment were not considered in this analysis¹.

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

5-Methoxypsoralen was tested in mice by skin application in combination with ultraviolet A radiation or solar-simulated radiation, producing skin papillomas and carcinomas; in these studies, no or few skin tumours were observed with ultraviolet A radiation or solar-simulated radiation alone. The studies were inadequate to evaluate the local and systemic carcinogenic effects of the compound itself¹.

C. Other relevant data

No data were available on the genetic and related effects of 5-methoxypsoralen in humans.

In the presence of ultraviolet A radiation, 5-methoxypsoralen induced chromosomal aberrations, sister chromatid exchanges and unscheduled DNA synthesis in human cells *in vitro*; sister chromatid exchanges, mutation and DNA cross-links in rodent cells *in vitro*; mutation, gene conversion and DNA cross-links in yeast; and mutation and prophage in bacteria².

5-Methoxypsoralen, tested in the absence of ultraviolet A radiation, was reported to be weakly mutagenic to bacteria².

References

¹*IARC Monographs*, 40, 327-347, 1986

²*IARC Monographs, Suppl. 6*, 377-379, 1987