6-MERCAPTOPURINE (Group 3)

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

No epidemiological study of 6-mercaptopurine as a single agent was available to the Working Group. Occasional case reports of exposure to 6-mercaptopurine, especially in the presence of concurrent therapy with other putative carcinogens, such as ionizing radiation, alkylating agents and other potent oncotherapeutic drugs, do not constitute evidence of carcinogenesis[1].

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

6-Mercaptopurine was tested by intraperitoneal administration and by skin painting (followed by croton oil) in mice and by intraperitoneal, subcutaneous and intravenous injection in rats. Limitations to the data in all the reports precluded evaluation of the possible carcinogenicity of this compound[1].

C. Other relevant data

6-Mercaptopurine induced chromosomal aberrations and sister chromatid exchanges in lymphocytes of treated patients in single studies[2].

In rodents treated *in vivo*, 6-mercaptopurine induced dominant lethal mutations, chromosomal aberrations and micronuclei, but not aneuploidy. The compound induced chromosomal aberrations in human lymphocytes *in vitro*. It induced mutation in cultured rodent cells and chromosomal aberrations and sister chromatid exchanges but not

aneuploidy in Chinese hamster cells *in vitro*. It did not transform mouse C3H 10T1/2 cells. 6-Mercaptopurine was mutagenic to and caused DNA damage in bacteria[2].

References

[1]*IARC Monographs*, *26*, 249-266, 1981

[2]*IARC Monographs*, *Suppl. 6*, 366-368, 1987