Haloperidol

Haloperidol is an antipsychotic drug that acts as a dopamine antagonist. It is used to treat Tourette's Disorder, schizophrenia and other psychotic conditions, and the symptoms associated with chemotherapy. It can be administered by the oral route or by injection.

Haloperidol passed the animal data screen, underwent a preliminary toxicological evaluation, and is being brought to the Carcinogen Identification Committee for consultation. This is a compilation of the relevant studies identified during the preliminary toxicological evaluation.

Epidemiological data

No cancer epidemiology studies were identified.

Animal carcinogenicity data

- Intraperitoneal injection studies in mice
  - Male NMRI mice, daily injections for five, 10, or 20 consecutive days and observed for up to 16 months: Fey *et al.* (1982)
  - Male and female AKC3F_1 hybrid mice, weekly injections for seven weeks and observed for eight months: Ember *et al.* (1985)
  - Male and female mice of different strains—NMRI, AKR, XVII AKF_1 hybrid, and male BALB/c/BOM mice, daily injections for five days and observed for seven to 24 months, depending on strain: Wunderlich *et al.* (1987)
  - Male Swiss mice, daily injections for five, 10, or 20 consecutive days and observed for 18 months: Van Cauteren *et al.* (1987)

- Long-term oral administration in mice
  - 18-month studies in male and female Albino Swiss mice: PDR (2005)

- Long-term oral administration in rats
  - 24-month studies in male and female Wistar rats: PDR (2005)

- Co-administration studies in mice
  - AKR mice, single subcutaneous injection of nitrosomethylurea on day 1 and i.p. injection of haloperidol on days 3-5, and observed for seven months: Wunderlich *et al*. (1987)
  - AKR mice, daily i.p. injection of haloperidol for five days, followed by twice weekly i.p. injections of 12-O-tetradecanoylphorbol-13-acetate (TPA) for five weeks, and observed for seven months: Wunderlich *et al*. (1987)

Other relevant data

- Genotoxicity
  - *Salmonella typhimurium* mutagenicity: Fey *et al.* (1982); Van Cauteren *et al.* (1987); reviewed in CCRIS (2006)
  - chromosome aberration and sister chromatid exchange test in CHO cells *in vitro*: reviewed in CCRIS (2006)

References[1]

Chemical Carcinogenesis Research Information System (CCRIS, 2006). http://toxnet.nlm.nih.gov (accessed on December 15, 2008).

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Fey F, Wunderlich V, Teichmann B, Sydow G, Kohler S (1982). Leukaemogenic and mutagenic activity of the butyrophenon, 4-[4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl]-1-(4-fluorophenyl)-1-butanone (haloperidol). *Carcinogenesis* **3**(2):223-224.

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Van Cauteren H, Vanparys P, de Meester C, Lambotte-Vandepaer M, Vandenberghe J, Marsboom R (1987). Mutagenic and leukemogenic activity of Haloperidol: A negative study. *Drug Chemical Toxicology* **10**:311-327.

Wunderlich V, Fey F, Sydow G (1987). Further characterization of the leukemogenic activity of haloperidol in mice. *Neoplasma* **34**:389-396.

[1] Copies of these listed references, as either the abstract, the relevant sections of the publication, or the complete publication, have been provided to members of the Carcinogen Identification Committee. These references have been provided in the order in which they are discussed in this document.