

2-Amino-5-Nitrothiazole

2-Amino-5-nitrothiazole is a synthetic veterinary antiprotozoal agent used since 1950 to treat farm fowl and pigeons. It is also used as an intermediate in the manufacture of a group of dyes known as disperse azo dyes. It is not known to occur as a natural product. People may be exposed to 2-amino-5-nitrothiazole through contact with birds treated with the drug, releases from poultry farms, and occupational exposures in the dye industry.

2-Amino-5-nitrothiazole 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

- Long-term feeding studies in mice
 - 104-week studies in male and female B6C3F₁ mice: NCI (1978)
- Long-term feeding studies in rats
 - 110-week exposure and additional one-week observation in male and female F344 rats: NCI (1978)
 - 46-week exposure and additional 20-week observation in weanling female Sprague-Dawley rats: Cohen *et al.* (1975)

Other relevant data

- Genotoxicity
 - Hepatocyte primary culture/DNA repair test: Williams *et al.* (1982)
 - Mutagenicity test in *Klebsiella pneumoniae*: Voogd *et al.* (1983)
 - SOS chromotest in *E. Coli*: von der Hude *et al.* (1988)
 - Mutagenicity assays in *Salmonella typhimurium* and *E. Coli*: Voogd *et al.* (1983); additional studies reviewed in CCRIS (1995)
 - Mitotic gene conversion assay in *Saccharomyces cerevisiae*: Voogd *et al.* (1983)
 - Mouse lymphoma assay: reviewed in CCRIS (1995)

Reviews

- IARC (1983)

References¹

Chemical Carcinogenesis Research Information System (CCRIS, 1995).

<http://toxnet.nlm.nih.gov> (accessed on February 9, 2009).

Cohen SM, Erturk E, Von Esch AM, Crovetti AJ, Bryan GT (1975). Carcinogenicity of 5-nitrofurans and related compounds with amino-heterocyclic substituents. *J Natl Cancer Inst.* **54**:841-850.

International Agency of Research on Cancer (IARC, 1983). *IARC Monographs on the evaluation of the carcinogenic risk of chemicals to humans. Some food additives, feed additives and naturally occurring substances.* Volume 31:71-7. IARC, Lyon, France.

National Cancer Institute (NCI 1978). *Bioassay of 2-amino-5-nitrothiazole for possible carcinogenicity.* National Cancer Institute. Technical Report Series No. 53. U.S. Department of Health, Education, and Welfare. Bethesda, MD.

von der Hude W, Behm C, Gurtler R, Basler A (1988). Evaluation of SOS chromotest. *Mutation Research* **203**:81-94.

Voogd CE, van der Stel JJ, Verharen HW (1983). The capacity of some nitro- and amino-heterocyclic sulfur compounds to induce base-pair substitutions. *Mutation Research* **118**:153-165.

Williams GM, Laspia MF, Dunkel VC (1982). Reliability of the hepatocyte primary culture/DNA repair test in testing of coded carcinogens and noncarcinogens. *Mutation Research* **97**:359-370.

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.