C. I. Acid Orange 3, a dinitrodiphenylamine derivative, is a dye used in semi-permanent hair coloring products and for dying textiles. Manufacturers, consumers and beauty salon workers are exposed.

C. I. Acid Orange 3 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 studies

- 103-week gavage studies
  - Male and female F344/N rats: NTP (1988)
    - Increase in rare renal transitional cell carcinomas of renal pelvis in females
    - No treatment-related tumor findings in males
  - Male and female B6C3F1 mice: NTP (1988)
    - No treatment-related tumor findings

Other relevant data

- Genotoxicity
    - Positive in some *Salmonella* strains, negative in one strain

- Structure activity considerations
  - C.I. Acid Orange 3 is a nitroaromatic compound with broad structural similarity to Proposition 65 carcinogens: 2,4-dinitrotoluene, o-nitroanisole, nitrobenzene and o-nitrotoluene.

Review

- IARC (1993)
References


National Toxicology Program (NTP, 1988). Toxicological and Carcinogenesis Studies of CI Acid Orange 3 in F344/N Rats and B6C3F1 Mice (Gavage Studies), NTP TR 335, NIH Publication No. 89-2591, National Institutes of Health.

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1 Excerpts or the complete publication have been provided to members of the Carcinogen Identification Committee, in the order in which they are discussed in this document.