Anthanthrene

Anthanthrene, also called dibenzo(cd,JK)pyrene, is a product of incomplete combustion. This polycyclic aromatic hydrocarbon is commonly found in cigarette smoke and engine exhaust. Anthanthrene is present in food and water that has been contaminated with combustion products, and in ambient air.

Anthanthrene 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

- Dermal studies in mice
  - Female Swiss mice (twice a week for 30 weeks and observed for an additional 40 weeks): Cavalieri et al. (1977)

- Intrapulmonary implantation studies in rats
  - Female Osborne-Mendel rats (implantation at three months of age, observed for life): Deutsch-Wenzel et al. (1983)

- Intra-mammillary injection studies in rats
  - Female Sprague-Dawley rats (injection into mammary glands at eight-weeks of age, observed for 40 weeks): Cavalieri et al. (1989)

- Tumor-initiating studies in mice
  - Female SENCAR mice (single dermal application of anthanthrene, followed after one week with dermal applications of tetradecanoylphorbol acetate (twice a week for 25 weeks): Cavalieri et al. (1989)

Other relevant data

- Genotoxicity
  - Salmonella mutagenicity assays: Andrews et al. (1978)
  - Binding to DNA: Cavalieri et al. (1983)

- Structural activity considerations
  - Structurally similar to other six-ring polycyclic aromatic hydrocarbons that are listed under Proposition 65 as carcinogens, including
benzo[a]pyrene, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene and dibenzo[a,l]pyrene.

Reviews

- IARC (1983; 1987)

References


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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.