

3-Nitrofluoranthene

3-Nitrofluoranthene is an environmental contaminant produced by the nitration of fluoranthene. It has been measured in ambient air particulates and in diesel engine exhaust. 3-Nitrofluoranthene is not produced or used in commercial quantities. It is a nitrated polycyclic aromatic hydrocarbon.

3-Nitrofluoranthene 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

- Subcutaneous injection studies in rats
 - F344/DuCrj male rats (injected “twice a week for 15 times” and observed up to day 377: Ohgaki *et al.* (1982)
- Intraperitoneal injection studies in mice
 - Newborn male and female Swiss-Webster BLU:Ha (ICR) mice (injected on day one, eight, and 15, and observed until age 26 weeks): Busby *et al.* (1989)
 - Newborn male B6C3F₁ mice (injected on day one, eight, and 15 and observed until one year of age): Von Tungeln *et al.* (1999)
- Intrapulmonary implantation studies in rats
 - Male F344/DuCrj rats (observed for 100 weeks): Horikawa *et al.* (1991)

Other relevant data

- Genotoxicity
 - DNA repair tests in
 - Human hepatocytes: Yoshimi *et al.* (1987)
 - Rat hepatocytes: Mori *et al.* (1987)
 - Mouse hepatocytes: Mori *et al.* (1987)
 - *Salmonella typhimurium* mutagenicity assays: Ball *et al.* (1988); Consolo *et al.* (1989); Shane *et al.* (1991)
 - Chinese hamster V79 cell HGPRT mutagenicity assay: Berry *et al.* (1985)
 - Syrian hamster embryo cell transformation assay: DiPaolo *et al.* (1983)
 - K- and H-*ras* mutations in B6C3F₁ mouse liver: Von Tungeln *et al.* (1999)
 - DNA adduct formation: Dietrich *et al.* (1988)
 - Reviews: Tokiwa *et al.* (1993)

- Structural activity considerations
 - Structurally similar to 3,7-dinitrofluoranthene and 3,9- dinitrofluoranthene, which are listed under Proposition 65 as carcinogens.

Reviews

- IARC (1984)
- Tokiwa *et al.* (1993)

References¹

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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.

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Ohgaki H, Matsukura N, Morino K, Kawachi T, Sugimura T, Morita K, Tokiwa H, Hirota T (1982). Carcinogenicity in rats of the mutagenic compounds 1-nitropyrene and 3-nitrofluoranthene. *Cancer Letters* **15**:1-7.

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Yoshimi N, Mori H, Sugie S, Owata H, Kinouchi T, Ohnishi Y (1987). Genotoxicity of a variety of nitroarenes in DNA repair tests with human hepatocytes. *Jpn J Cancer Res (Gann)* **78**:807-13.