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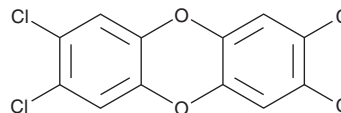
PRODUCT INFORMATION



2,3,7,8-Tetrachlorodibenzo-*p*-dioxin

Item No. 38392

CAS Registry No.: 1746-01-6
Formal Name: 2,3,7,8-tetrachloro-dibenzo[b,e][1,4]dioxin
Synonyms: TCDBD, TCDD,
2,3,7,8-Tetrachlorodibenzodioxin,
2,3,7,8-Tetrachlorodibenzo-1,4-dioxin
MF: C₁₂H₄Cl₄O₂
FW: 322.0
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2,3,7,8-Tetrachlorodibenzo-*p*-dioxin is supplied as a solid. A stock solution may be made by dissolving the 2,3,7,8-tetrachlorodibenzo-*p*-dioxin in the solvent of choice, which should be purged with an inert gas. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin is slightly soluble in chloroform.

Description

2,3,7,8-Tetrachlorodibenzo-*p*-dioxin is a toxicant and an agonist of the aryl hydrocarbon receptor (AhR; ED₅₀ = 0.2 nmol/kg in a reporter assay using chicken embryos).¹ It also induces AhR ubiquitination and degradation in Hepa-1c1c7 hepatic cells when used at a concentration of 1 nM.² Oral administration of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (0.1 mg/kg) increases mortality and induces severe liver necrosis, thymic atrophy, and cell depletion in lymphoid organs in rats.³ It does not induce hepatomegaly or reduce thymus weight and lymphocyte number but does increase immune cell infiltration into the lungs in AhR knockout mice when administered at a dose of 2 mg/kg.⁴

References

1. Poland, A., Glover, E., and Kende, A.S. Stereospecific, high affinity binding of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin by hepatic cytosol. Evidence that the binding species is receptor for induction of aryl hydrocarbon hydroxylase. *J. Biol. Chem.* **251(16)**, 4936-4946 (1976).
2. Ma, Q. and Baldwin, K.T. 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin-induced degradation of aryl hydrocarbon receptor (AhR) by the ubiquitin-proteasome pathway. Role of the transcription activator and DNA binding of AhR. *J. Biol. Chem.* **275(12)**, 8432-8438 (2000).
3. Gupta, B.N., Vos, J.G., Moore, J.A., *et al.* Pathologic effects of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin in laboratory animals. *Environ. Health Perspect.* **5**, 125-140 (1973).
4. Fernandez-Salguero, P.M., Hilbert, D.M., Rudikoff, S., *et al.* Aryl-hydrocarbon receptor-deficient mice are resistant to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin-induced toxicity. *Toxicol. Appl. Pharmacol.* **140(1)**, 173-179 (1996).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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