# PRODUCT INFORMATION

## Nitisinone

*Item No. 17924*

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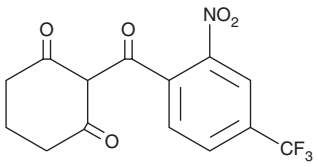
| **CAS Registry No.:** | 104206-65-7 |
| **Formal Name:** | 2-[2-nitro-4-(trifluoromethyl) benzoyl]-1,3-cyclohexanedione |
| **Synonyms:** | NTBC, SC-0735 |
| **MF:** | $C_{14}H_{10}F_3NO_5$ |
| **FW:** | 329.2 |
| **Purity:** | ≥98% |
| **UV/Vis.:** | $\lambda_{max}$: 216, 271 nm |
| **Supplied as:** | A crystalline 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

Nitisinone is supplied as a crystalline solid. A stock solution may be made by dissolving the nitisinone in the solvent of choice, which should be purged with an inert gas. Nitisinone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nitisinone in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Nitisinone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nitisinone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nitisinone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Nitisinone is an inhibitor of 4-hydroxyphenylpyruvate dioxygenase (HPPD), which converts 4-hydroxyphenylpyruvate (HPPA) to homogentisate in the tyrosine catabolic pathway.[1] Nitisinone increases urinary levels of HPPA and 4-hydroxyphenyllactate (HPLA) in rats when administered at a dose of 10 mg/kg. Nitisinone (3 mg/kg) prevents the neonatal lethality of fumarylacetoacetate hydrolase (FAH) deficiency in mice when administered to pregnant dams.[2] It exhibits hepatoprotective effects in *FAH*$^{-/-}$ mice, such as prevention of increases in plasma levels of aspartate serine aminotransferase (AST) and conjugated bilirubin, when administration is continued following birth at a dose of 1 mg/kg. Nitisinone (100 µg) decreases urinary excretion of homogentisate and increases urinary excretion of HPPA, HPLA, and 4-hydroxyphenylacetate in a mouse model of alkaptonuria induced by ethylnitrosourea.[3] Formulations containing nitisinone have been used in the treatment of hereditary tyrosinemia type 1 (HT-1).

### References


1. Ellis, M.K., Whitfield, A.C., Gowans, L.A., *et al.* Inhibition of 4-hydroxyphenylpyruvate dioxygenase by 2-(2-nitro-4-trifluoromethylbenzoyl)-cyclohexane-1,3-dione and 2-(2-chloro-4-methanesulfonylbenzoyl)-cyclohexane-1,3-dione. *Toxicol. Appl. Pharmacol.* **133(1)**, 12-19 (1995).
2. Grompe, M., Lindstedt, S., al-Dhalimy, M., *et al.* Pharmacological correction of neonatal lethal hepatic dysfunction in a murine model of hereditary tyrosinaemia type I. *Nat. Genet.* **10(4)**, 453-460 (1995).
3. Suzuki, Y., Oda, K., Yoshikawa, Y., *et al.* A novel therapeutic trial of homogentisic aciduria in a murine model of alkaptonuria. *J. Hum. Genet.* **44(2)**, 79-84 (1999).





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