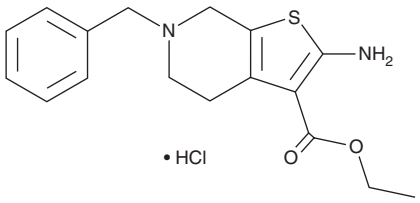
PRODUCT INFORMATION

Tinoridine (hydrochloride)

Item No. 42963

CAS Registry No.:	25913-34-2
Formal Name:	2-amino-4,5,6,7-tetrahydro-6-(phenylmethyl)-thieno[2,3-c] pyridine-3-carboxylic acid, ethyl ester, monohydrochloride
Synonym:	Y-3642
MF:	$C_{17}H_{20}N_2O_2S \bullet HCl$
FW:	352.9
Purity:	≥98%
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

Tinoridine (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the tinoridine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Tinoridine (hydrochloride) is soluble (≥10 mg/ml) in DMSO.

Description

Tinoridine is an inhibitor of ferroptosis.[1] It inhibits ferroptosis induced by (1S,3R)-RSL3 (Item No. 19288) in primary rat nucleus pulposus cells when used at concentrations of 1.25 or 2.5 µM. Tinoridine also scavenges DPPH (Item No. 14805) radicals in a cell-free assay in a concentration-dependent manner and inhibits superoxide dismutase (Sod) and catalase activities in primary rat liver microsomes when used at concentrations of 10 and 250 µg/ml, respectively.[2] It inhibits carbon tetrachloride-induced increases in hepatic levels of cytochrome P450 (Cyp450) and glucose-6-phosphatase (G6pc), serum levels of alanine transaminase (ALT) and aspartate aminotransferase (AST), and hepatic necrosis in a mouse model of liver damage when administered at a dose of 100 mg/kg.[3] Tinoridine inhibits puncture-induced increases in disc malformation and decreases in disc height in a rat model of intervertebral disc degeneration (IVDD).[1] It increases IVD cell levels of collagen II, glutathione peroxidase 4 (Gpx4), and nuclear factor erythroid 2-related factor 2 (Nrf2) and reduces IVD cell levels of matrix metalloproteinase-13 (Mmp-13) in the same model.

References

1. Yang, S., Zhu, Y., Shi, Y., *et al.* Screening of NSAIDs library identifies Tinoridine as a novel ferroptosis inhibitor for potential intervertebral disc degeneration therapy. *Free. Radic. Biol. Med.* **221,** 245-256 (2024).
2. Shimada, O., and Yasuda, H. Hydroxyl radical scavenging action of tinoridine. *Agents Actions* **19(3-4),** 208-214 (1986).
3. Yasuda, H., Izumi, N., Shimada, O., *et al.* The protective effect of tinoridine against carbon tetrachloride hepatotoxicity. *Toxicol. Appl. Pharmacol.* **52(3),** 407-413 (1980).

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