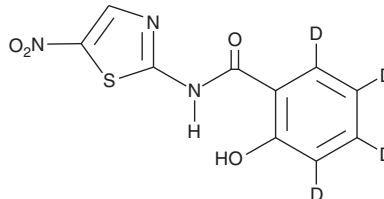


# PRODUCT INFORMATION



## Tizoxanide-d<sub>4</sub> Item No. 28533

**CAS Registry No.:** 1246817-56-0  
**Formal Name:** 2-hydroxy-N-(5-nitro-2-thiazolyl)-benzamide-3,4,5,6-d<sub>4</sub>  
**MF:** C<sub>10</sub>H<sub>3</sub>D<sub>4</sub>N<sub>3</sub>O<sub>4</sub>S  
**FW:** 269.3  
**Chemical Purity:** ≥98% (Tizoxanide)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Tizoxanide-d<sub>4</sub> is intended for use as an internal standard for the quantification of tizoxanide (Item No. 13693) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Tizoxanide-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the tizoxanide-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Tizoxanide-d<sub>4</sub> is soluble in DMSO and methanol.

### Description

Tizoxanide is an active metabolite of the antiparasitic nitazoxanide (Item No. 13692).<sup>1</sup> Tizoxanide is formed from nitazoxanide via deacetylation of nitazoxanide in the stomach. It is active against *M. tuberculosis* (MIC = 16 µg/ml). It also reduces the growth of the disease-causing parasites *L. mexicana* and *T. cruzi* *in vitro* (IC<sub>50</sub>s = 6.2 and 17.5 µM, respectively), inhibits influenza A replication (EC<sub>50</sub>s = 0.3-1 µM), and inhibits hepatitis B and hepatitis C virus replication (EC<sub>50</sub> = 0.15 µM for both).<sup>2-4</sup>

### References

1. de Carvalho, L.P.S., Lin, G., Jiang, X., *et al.* Nitazoxanide kills replicating and nonreplicating *Mycobacterium tuberculosis* and evades resistance. *J. Med. Chem.* **52**(19), 5789-5792 (2009).
2. Chan-Bacab, M.J., Hernández-Núñez, E., and Navarrete-Vázquez, G. Nitazoxanide, tizoxanide and a new analogue [4-nitro-N-(5-nitro-1,3-thiazol-2-yl)benzamide; NTB] inhibit the growth of kinetoplastid parasites (*Trypanosoma cruzi* and *Leishmania mexicana*) *in vitro*. *J. Antimicrob. Chemother.* **63**(6), 1292-1293 (2009).
3. Rossignol, J.F., La Frazia, S., Chiappa, L., *et al.* Thiazolides, a new class of anti-influenza molecules targeting viral hemagglutinin at the post-translational level. *J. Biol. Chem.* **284**(43), 29798-29808 (2009).
4. Korba, B.E., Montero, A.B., Farrar, K., *et al.* Nitazoxanide, tizoxanide and other thiazolides are potent inhibitors of hepatitis B virus and hepatitis C virus replication. *Antiviral Res.* **77**(1), 56-63 (2008).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM