

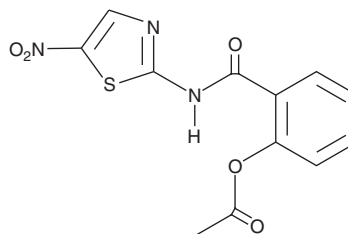
PRODUCT INFORMATION



Nitazoxanide

Item No. 13692

CAS Registry No.:	55981-09-4
Formal Name:	2-(acetyloxy)-N-(5-nitro-2-thiazolyl)-benzamide
Synonyms:	NSC 697855, NTZ
MF:	C ₁₂ H ₉ N ₃ O ₅ S
FW:	307.3
Purity:	≥95%
UV/Vis.:	λ _{max} : 238, 341 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

Nitazoxanide (NTZ) is supplied as a crystalline solid. A stock solution may be made by dissolving the NTZ in the solvent of choice, which should be purged with an inert gas. NTZ is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of NTZ in these solvents is approximately 20 and 15 mg/ml, respectively.

NTZ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, NTZ should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. NTZ has a solubility of approximately 0.1 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nitazoxanide is a prodrug form of the antiparasitic tizoxanide (Item No. 13693), an inhibitor of pyruvate-ferredoxin oxidoreductase (PFOR).¹ It inhibits growth of the parasite *C. parvum* in MDBK cells when used at a concentration of 10 µg/ml.² It is active against *M. tuberculosis* and *M. bovis* (MIC = 16 µg/ml for both) and bactericidal against replicating and non-replicating *M. tuberculosis*.¹ Nitazoxanide (5 and 10 µM) inhibits replication of severe acute respiratory coronavirus 2 (SARS-CoV-2) and Middle East respiratory syndrome CoV (MERS-CoV).³ It also inhibits viral hemagglutinin N-glycosylation and replication of the influenza strains H1N1 PR8 and WSN, as well as H5N9 A/Ck viruses (EC₅₀s = 1, 0.5, and 1 µg/ml, respectively).⁴ Nitazoxanide (250 mg/kg) reduces oocyst shedding and parasite burden, but not the severity of diarrhea, in a gnotobiotic piglet model of *C. parvum* infection.² Formulations containing nitazoxanide have been used in the treatment of diarrhea caused by *G. lamblia* or *C. parvum*.

Reference

- 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).
- Theodos, C.M., Griffiths, J.K., D'Onfro, J., *et al.* Efficacy of nitazoxanide against *Cryptosporidium parvum* in cell culture and in animal models. *Antimicrob. Agents Chemother.* **42**(8), 1959-1965 (1998).
- Mostafa, A., Kandeil, A., Elshaier, Y.A.M.M., *et al.* FDA-approved drugs with potent in vitro antiviral activity against severe acute respiratory syndrome coronavirus 2. *Pharmaceuticals (Basel)* **13**(12), 443 (2020).
- Rosignol, J.F., La Frazia, S., Chiappa, L., *et al.* Thiazolidines, a new class of anti-influenza molecules targeting viral hemagglutinin at the post-translational level. *J. Biol. Chem.* **284**(43), 29798-29808 (2009).

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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