

## Nitazoxanide (10 mg)

**Catalogue No.:** PE-1849-10

**Description:** Pharmacology: Nitazoxanide is a clinically useful antiparasitic agent (1). It has since been repurposed as a broad-spectrum antiviral agent that is active against many RNA and DNA viruses including influenza, hepatitis B and C, RSV, coronavirus, dengue and others (2). Its antiparasitic activity is believed to be due to inhibition of pyruvate:ferredoxin/flavodoxin oxidoreductases (3). Antiviral activity involves activation of protein kinase activated by double-stranded RNA (PKR) leading to phosphorylation of eukaryotic initiation factor 2 alpha (eIF2&#945;) (4). Nitazoxanide has also been found to inhibit Wnt signaling independent of adenomatous polyposis coli (APC), targeting peptidyl arginine deiminase 2 (PAD2) resulting in increased citrullination of  $\beta$ -catenin (5). PubChem CID: 41684.

Product is sold for research use only. Not for human therapeutic use or for medicinal purposes.

InChI

InChI=1S/C12H9N3O5S/c1-7(16)20-9-5-3-2-4-8(9)11(17)14-12-13-6-10(21-12)15(18)19/h2-6H,1H3,(H,13,14,17)

InChI Key

YQNQNVDNTFHQSW-UHFFFAOYSA-N

Canonical SMILES

CC(=O)OC1=CC=CC=C1C(=O)NC2=NC=C(S2)[N+](=O)[O-]

**Batch No.:** See product label.

**Unit size:** 10 mg

**Other Names:** NTZ; CAS 55981-09-4

**Molecular Weight:** 307.3 g/mol. Molecular Formula: C12H9N3O5S

**Compound Name:** O-[N-(5-Nitrothiazol-2-yl)carbamoyl]phenyl acetate;  
[2-[(5-nitro-1,3-thiazol-2-yl)carbamoyl]phenyl] acetate

**Purity:** >98% (HPLC); NMR (Conforms)

**Biol. activity:** NTZ demonstrates IC50 values of 2.5 and 10  $\mu$ M for Giardia and Cryptosporidium, respectively. Additionally, NTZ kills replicating and nonreplicating M. tuberculosis with an IC50 value of 1  $\mu$ M, while seemingly evading the development of resistance (6).

**Applications:** Biochemical inhibition.

**Appearance:** Dry, white powder.

**Reconstitution:** Soluble in DMSO. May be dissolved in DMSO up to 50 mg/mL.

**Storage:** Store desiccated as supplied at -20C for up to 2 years. Store solutions at -20C for up to 1 month. Prevent multiple freeze-thaw cycles.

**Expiry Date:** See storage conditions.

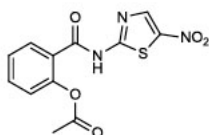
**General References:** 1. CA White Expert Rev. Anti. Infect. Ther. 2004 2:43

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2. J-F Rossignol Antiviral Res. 2014 110:94
3. PS Hoffman et al. Antimicrob. Agents Chemother. 2007 51:868
4. M Elazar et al. Gastroenterology 2009 137:1827
5. Y Qu et al. Nat. Chem. Biol. 2018 14:94
6. de Carvalho., et al. 2009. J. Med. Chem. 52(19), 5789-5792

**MSDS:** Please refer to our online product listing for current protocol/MSDS versions.



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