

Certificate of Analysis

www.tocris.com

Product Name: Niclosamide

Catalog No.: 4079

Batch No.: 1

CAS Number: 50-65-7

EC Number: 200-056-8

IUPAC Name: 5-Chloro-*N*-(2-chloro-4-nitrophenyl)-2-hydroxybenzamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₃H₈Cl₂N₂O₄

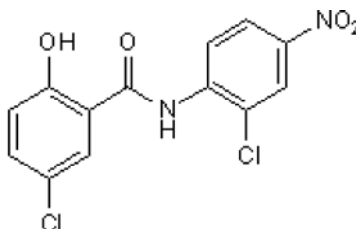
Batch Molecular Weight: 325.99

Physical Appearance: Pale yellow solid

Solubility: ethanol to 25 mM
DMSO to 10 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.9% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

| | Carbon | Hydrogen | Nitrogen |
|-------------|--------|----------|----------|
| Theoretical | 47.73 | 2.46 | 8.56 |
| Found | 47.8 | 2.43 | 8.51 |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Niclosamide is an inhibitor of the STAT3 signaling pathway; inhibits the activation, nuclear translocation and transactivation of STAT3. Niclosamide displays selectivity for STAT3 over STAT1, STAT5, JAK1, JAK2 and Src kinases. It inhibits the transcription of STAT3 target genes and induces cell growth inhibition, apoptosis and cell cycle arrest of cancer cells with constitutively active STAT3. It also reversibly inhibits mTORC1 signaling and stimulates autophagy in vitro; displays antineoplastic effects in acute myelogenous leukemia (AML) stem cells. In addition, niclosamide inhibits SARS-CoV-2 replication in vitro (IC₅₀ = 0.34 μM in Ver... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

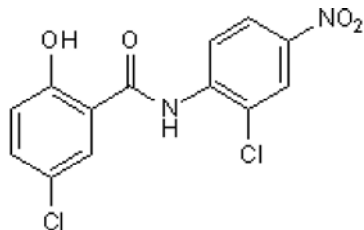
Batch Molecular Formula: C₁₃H₈Cl₂N₂O₄

Batch Molecular Weight: 325.99

Physical Appearance: Pale yellow solid

Minimum Purity: ≥99%

Batch Molecular Structure:



References:

Braga et al (2021) Drugs that inhibit TMEM16 proteins block SARS-CoV-2 spike-induced syncytia. *Nature* **594** 88. PMID: 33827113.

Jin et al (2010) Antineoplastic mechanisms of niclosamide in acute myelogenous leukemia stem cells: inactivation of the NF-κB pathway and generation of reactive oxygen species. *Cancer Res.* **70** 2516. PMID: 20215516.

Ren et al (2010) Identification of niclosamide as a new small-molecule inhibitor of the STAT3 signaling pathway. *ACS Med.Chem.Lett.* **1** 454. PMID: 24900231.

Storage: Store at +4°C

Solubility & Usage Info:

ethanol to 25 mM

DMSO to 10 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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