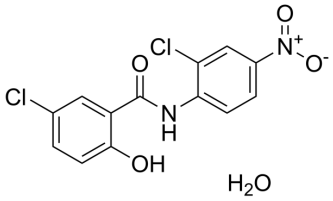
Niclosamide monohydrate

Cat. No.:	HY-B0497B
CAS No.:	73360-56-2
Molecular Formula:	$C_{13}H_{10}Cl_2N_2O_5$
Molecular Weight:	345.13
Target:	STAT; Antibiotic; Parasite
Pathway:	JAK/STAT Signaling; Stem Cell/Wnt; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Niclosamide (BAY2353) monohydrate is an orally active antihelminthic agent used in parasitic infection research[1]. Niclosamide monohydrate is a STAT3 inhibitor with an IC_{50} of 0.25 μM in HeLa cells[4]. Niclosamide monohydrate has biological activities against cancer, and inhibits DNA replication in Vero E6 cells[2][3][5].

IC_{50} & Target

STAT3
0.25 μM (IC_{50}, in HeLa cells)

In Vitro

Niclosamide monohydrate (0.6 nM-46 μM) treatment inhibits adrenocortical carcinoma cellular proliferation in BD140A, SW-13, and NCI-H295R cells[3].
Niclosamide monohydrate (0.05-5 μM, 24 h) treatment inhibits STAT3-mediated luciferase reporter activity in HeLa cells [4].
Niclosamide monohydrate (10 μM) treatment inhibits virus replication in Vero E6 cells[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	BD140A, SW-13 and NCI-H295R cells
Concentration:	0.6 nM-46 μM
Incubation Time:	
Result:	Inhibited cellular proliferation in adrenocortical carcinoma cell lines with the IC_{50} of 0.12 μM, 0.15 μM, and 0.53 μM in BD140A, SW-13, and NCI-H295R, respectively.

Cell Viability Assay[4]

Cell Line:	Hela cells
Concentration:	0.05-5 μM
Incubation Time:	24 hours
Result:	Inhibited STAT3-mediated luciferase reporter activity with an IC_{50} of 0.25 μM.

Cell Viability Assay[5]

Cell Line:	Vero E6 cells
Concentration:	10 μM
Incubation Time:	2 days
Result:	Inhibited the synthesis of viral antigens of SARS-CoV in Vero E6 cells.

In Vivo

Niclosamide monohydrate (oral gavage; 100 mg/kg, 200 mg/kg; once a week; 8 weeks) treatment inhibits adrenocortical carcinoma tumor growth in vivo[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Nu^+/Nu^+ mice injected with NCI-H295R cells[3]
Dosage:	100 mg/kg, 200 mg/kg
Administration:	Oral gavage; 100 mg/kg, 200 mg/kg; once a week; 8 weeks
Result:	Showed a 60%-80% inhibition in tumor growth, as compared to the control group.

CUSTOMER VALIDATION

Caution: Product has not been fully validated for medical applications. For research use only.

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- Cell Res. 2022 Jun;32(6):513-529.
- Cell Syst. 2018 Apr 25;6(4):424-443.e7.
- Cell Death Dis. 2022 Feb 3;13(2):112.
- Oncogenesis. 2022 May 23;11(1):28.
- Emerg Microbes Infect. 2022 Jan 6;1-29.

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REFERENCES

[1]. P Andrews, et al. The biology and toxicology of molluscicides, Bayluscide. Pharmacol Ther. 1982;19(2):245-95.

[2]. Wei Chen, et al. Niclosamide: Beyond an antihelminthic drug. Cell Signal. 2018 Jan;41:89-96.

[3]. Kei Satoh, et al. Identification of Niclosamide as a Novel Anticancer Agent for Adrenocortical Carcinoma. Clin Cancer Res. 2016 Jul 15;22(14):3458-66.

[4]. Xiaomei Ren, et al. Identification of Niclosamide as a New Small-Molecule Inhibitor of the STAT3 Signaling Pathway. ACS Med Chem Lett. 2010 Sep 7;1(9):454-9.

[5]. Chang-Jer Wu, et al. Inhibition of severe acute respiratory syndrome coronavirus replication by niclosamide. Antimicrob Agents Chemother. 2004 Jul;48(7):2693-6.