

产品名称：氯硝柳胺
产品别名：Niclosamide

生物活性:					
Description	Niclosamide (BAY2353) is an orally bioavailable chlorinated salicylanilide, with anthelmintic and potential antineoplastic activity. Niclosamide (BAY2353) inhibits STAT3 with IC ₅₀ of 0.25 μM in HeLa cells and inhibits DNA replication in a cell-free assay.				
IC ₅₀ & Target	STAT3				
	0.25 μM (IC ₅₀ , in HeLa cells)				
In Vitro	Niclosamide is an inhibitor of STAT3, inhibiting STAT3-mediated luciferase reporter activity with an IC50 of 0.25 μM in HeLa cells. Niclosamide (1 μM) inhibits the EGF-induced nuclear translocation of STAT3 in Du145 cells. Niclosamide (< 2 μM) dose dependently inhibits the transcription of STAT3 downstream genes in Du145 cells. Niclosamide (< 10 μM) induces G0/G1 arrest and apoptosis of Du145 cancer cells in a dose dependent manner[1]. Niclosamide can block SARS-CoV replication at a micromolar concentration in Vero E6 cells infected with SARS-CoV[2]. Niclosamide (< 7.5 μM) promotes Frizzled1 endocytosis, downregulates Dishevelled-2 protein, and inhibits Wnt3A-stimulated beta-catenin stabilization and LEF/TCF reporter activity in U2OS cells[3]. Niclosamide inhibits the TNF-induced NF-κB reporter activity in a dose- and time-dependent manner in U2OS cells. Niclosamide (125 nM) inhibits NF-κB activation induced by p65, IKKα, IKKβ, IKKγ, and TAK1 in U2OS cells. Niclosamide (< 500 nM) completely block the time- and dose-dependent TNFα-induced alteration of the NF-κB-DNA complex in HL-60 cells. Niclosamide (< 10 nM) inhibits constitutive NF-κB activation in U266 cells. Niclosamide inhibits TNF-induced degradation of IκBα and relocation of p65 in a dose- and time-dependent manner in HL-60, Molm13, or AML primary cells. Niclosamide (500 nM) causes decrease in TNF-induced NF-κB-dependent gene products involved in cell survival in HL-60 cells. Niclosamide also inhibits the growth and induces robust apoptosis of AML cells associated with decreased Mcl-1 and XIAP levels and increased intracellular ROS levels[4].				
In Vivo	Niclosamide (40 mg/kg/d, i.p.) suppresses the growth of xenografted AML cells in nude mice bearing HL-60 xenograft tumors[4].				
Solvent&Solubility	In Vitro: DMF : 9.42 mg/mL (28.80 mM; Need ultrasonic and warming)				
	Preparing Stock Solutions	Solvent Mass Concentration	1 mg	5 mg	10 mg
		1 mM	3.0570 mL	15.2849 mL	30.5698 mL
		5 mM	0.6114 mL	3.0570 mL	6.1140 mL
	10 mM	0.3057 mL	1.5285 mL	3.0570 mL	
*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。 储备液的保存方式和期限：-80℃, 6 months; -20℃, 1 month。-80℃ 储存时，请在 6 个月内使用，-20℃ 储存时，请在 1 个月内使用。					
	[1]. Ren, X., et al., Identification of niclosamide as a new small-molecule inhibitor of the STAT3 signaling pathway. ACS Medicinal Chemistry Letters, 2010. 1(9): p. 454-459. [2]. Wu CJ, et al. Inhibition of severe acute respiratory syndrome coronavirus replication by niclosamide.				

References	Antimicrob Agents Chemother. 2004 Jul;48(7):2693-6. [3]. Chen, M., et al., The anti-helminthic niclosamide inhibits Wnt/Frizzled1 signaling. Biochemistry. 2009. 48(43): p. 10267-74. [4]. Jin, Y., et al. Antineoplastic mechanisms of niclosamide in acute myelogenous leukemia stem cells: inactivation of the NF-kappaB pathway and generation of reactive oxygen species. Cancer Res. 2010. 70(6): p. 2516-27.
实验参考:	
Cell Assay	Cells are plated in 96-well culture plates with cell density of $3-4 \times 10^3$ cells/well and treat with Niclosamide by adding 100 μL medium containing Niclosamide of various concentrations on the second day. After 72-hour's treatment, MTT is added to each well and incubated for additional 4-5 hours, and the absorbance is measured on a microplate reader at 570 nm. Cell growth inhibition is evaluated as the ratio of the absorbance of the sample to that of the control. The results are representative of at least 3 independent experiments. [1]
Animal Administration	Male <i>nu/nu</i> BALB/c mice are used in the assay. HL-60 cells are inoculated s.c. on the flanks of 4- to 6-wk-old mice. Tumors are measured every other day with use of calipers. Mice bearing HL-60 xenografts are randomized to receive treatment with normal saline (control) or p-niclosamide for 15 days (n=7 animals each). Tumor volumes are calculated by the following formula: $a^2 \times b \times 0.4$, where a is the smallest diameter and b is the diameter perpendicular to a. After mice are euthanized, xenografts are dissected, weighed, or preserved. [4]
Kinase Assay	All of the protein kinases are expressed either in Sf9 insect cells or in E.coli as recombinant GST-fusion proteins or His-tagged proteins. A radiometric protein kinase assay is used for measuring the kinase activity of the 22 protein kinases. Briefly, for each protein kinase, 50 μL reaction cocktail containing 60 mM HEPES-NaOH, 3 mM $MgCl_2$, 3 mM $MnCl_2$, 3 μM Na-orthovanadate, 1.2 mM DTT, 50 μg/mL PEG20000, 1 μM [γ-^{33}P]-ATP, Niclosamide, adequate amount of enzyme and its substrate. The PKC-alpha assay additionally contain 1 mM Ca_2, 4 mM EDTA, 5 μg/mL phosphatidylserine and 1 μg/mL 1, 2-Dioleoyl-glycerol. The reaction cocktails are incubated at 37°C for 60 minutes and stop with 50 μL 2% (v/v) H_3PO_4. Incorporation of ^{33}Pi is determined with a microplate scintillation counter. The activities and the IC_{50} values are calculated using Quattro Workflow V2.28. [1]
References	[1]. Ren, X., et al., Identification of niclosamide as a new small-molecule inhibitor of the STAT3 signaling pathway. ACS Medicinal Chemistry Letters, 2010. 1(9): p. 454-459. [2]. Wu CJ, et al. Inhibition of severe acute respiratory syndrome coronavirus replication by niclosamide. Antimicrob Agents Chemother. 2004 Jul;48(7):2693-6. [3]. Chen, M., et al., The anti-helminthic niclosamide inhibits Wnt/Frizzled1 signaling. Biochemistry. 2009. 48(43): p. 10267-74. [4]. Jin, Y., et al. Antineoplastic mechanisms of niclosamide in acute myelogenous leukemia stem cells: inactivation of the NF-kappaB pathway and generation of reactive oxygen species. Cancer Res. 2010. 70(6): p. 2516-27.