Niflumic acid

Cat. No.: HY-B0493

CAS No.: 4394-00-7

Molecular Formula: $C_{13}H_9F_3N_2O_2$

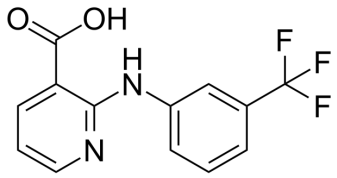
Molecular Weight: 282.22

Target: Chloride Channel; COX

Pathway: Membrane Transporter/Ion Channel; Immunology/Inflammation

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (354.33 mM)

H_2O : < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5433 mL	17.7167 mL	35.4333 mL
5 mM	0.7087 mL	3.5433 mL	7.0867 mL
10 mM	0.3543 mL	1.7717 mL	3.5433 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.86 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.86 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Niflumic acid is a calcium-activated chloride channel blocker and COX-2 inhibitor with the IC_{50} value of 100 nM. Niflumic acid induces apoptosis through caspase-8/Bid/Bax pathway in lung cancer cells. Niflumic acide exhibits anti-tumor activity by affecting the expression of ERK1/2 and the activity of MMP2 and MMP9. Niflumic acid has orally bioactivity. Niflumic acid acts on rheumatoid arthritis[1][2][3][4][5][6][7][8].

IC_{50} & Target

COX-2

100 nM (IC_{50})

In Vitro

Niflumic acid (100 and 200 μM; 48 h) combined with Ciglitazone (HY-W011220) exerts cytotoxic effect against A549, H460, and H1299 cells[5].
Niflumic acid (0-300 μM; 36 h) combined with Ciglitazone induces apoptosis in A549, H460, and H1299 cells[5].
Niflumic acid (100 μM; 30 h) combined with Ciglitazone induces activates caspase-8/Bid/Bax pathway in lung cancer cells[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[5]

Cell Line:	A549, H460, and H1299 cells
Concentration:	0 μM, 100 μM,200 μM, 300 μM
Incubation Time:	48 h
Result:	Showed a marked synergistic decrease in cell viability with Ciglitazone.

Apoptosis Analysis[5]

Cell Line:	A549, H460, and H1299 cells
Concentration:	100 μM, 200 μM
Incubation Time:	48 h
Result:	Showed a marked synergistic increase apoptosis with Ciglitazone.

Cell Viability Assay[5]

Cell Line:	A549, H460, and H1299 cells
Concentration:	100 μM
Incubation Time:	30 h
Result:	Showed a marked synergistic increase of proteins level of caspase-8, Bid, and Bax with Ciglitazone.

In Vivo

Niflumic acid (30 mg/kg; inhalation; 2 times in 10 min) inhibits the secretory response of mucus granules in an pig asthma model [8].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Pig with asthma [8]
Dosage:	30 mg/kg
Administration:	Inhalation
Result:	Showed significantly inhibiting the decrease in mucus area.

CUSTOMER VALIDATION

- Comput Struct Biotec. 2023 Feb 24.

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REFERENCES

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[6]. Criddle, D.N., et al., Inhibitory action of niflumic acid on noradrenaline- and 5-hydroxytryptamine-induced pressor responses in the isolated mesenteric vascular bed of the rat. Br J Pharmacol, 1997. 120(5): p. 813-8.

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[8]. Picollo, A., et al., Mechanism of interaction of niflumic acid with heterologously expressed kidney CLC-K chloride channels. J Membr Biol, 2007. 216(2-3): p. 73-82.

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