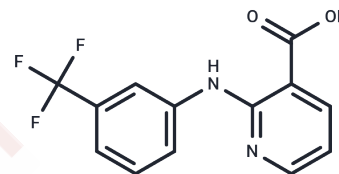


## Niflumic acid

## Chemical Properties

CAS No. :	4394-00-7
Formula:	C <sub>13</sub> H <sub>9</sub> F <sub>3</sub> N <sub>2</sub> O <sub>2</sub>
Molecular Weight:	282.22
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Niflumic acid (Nifluril) is a Ca <sup>2+</sup> -activated Cl <sup>-</sup> channel blocker and an analgesic and anti-inflammatory agent used in the therapy of rheumatoid arthritis.
Targets(IC50)	Chloride channel, COX, Monocarboxylate transporter, Phospholipase, UGT
In vivo	Niflumic acid suppresses calcium-activated currents on the basolateral membrane of rat pancreatic exocrine cells with an IC <sub>50</sub> of 50 μM. It dose-dependently and reversibly activates the calcium-activated potassium (KCa) channels. Niflumic acid induces a spontaneous transient concentration-dependent inhibition of inward currents (STIC, calcium-activated chloride currents) amplitude. It inhibits calcium-activated chloride channels with a K <sub>i</sub> of 17 mM. Additionally, Niflumic acid suppresses ICl(Ca) under the permeabilizing effect of Ca <sup>2+</sup> on oocytes through Ca <sup>2+</sup> ionophore A23187, suggesting the inhibition of ICl(Ca) results from direct interaction with Cl <sup>-</sup> channels, not by disruption of Ca <sup>2+</sup> entry through voltage-dependent Ca <sup>2+</sup> channels. Niflumic acid attenuates norepinephrine and caffeine-induced inward currents (I <sub>O</sub> (Ca)) with an IC <sub>50</sub> of 6.6 μM, which is less effective than that on spontaneous currents. It exhibits a voltage-dependent inhibition of the amplitude of spontaneous transient currents (STIC), with IC <sub>50</sub> values of 1.1 μM at +50 mV and 2.3 μM at -50 mV. Furthermore, Niflumic acid reduces airway hyperresponsiveness and eosinophilic infiltration, as well as inhibits IL-13 induced goblet cell hyperplasia. Following the IL-13 challenge, Niflumic acid hampers the overexpression of the MUC5AC gene (a marker of goblet cell proliferation) and levels of chemokines in bronchoalveolar lavage fluid. It also represses the activation of JAK/STAT6, AK2, and the expression of chemokines in epithelial cells.

## Solubility Information

Solubility	DMSO: 60 mg/mL (212.6 mM), Sonication is recommended. H <sub>2</sub> O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.09 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and</i>

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In vivo Formulation	<i>used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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### Preparing Stock Solutions

	1mg	5mg	10mg
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
50 mM	0.0709 mL	0.3543 mL	0.7087 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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