Data Sheet (Cat.No.T1555)

TargetMol

Diclofenac sodium

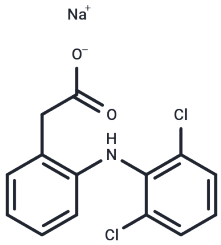
Chemical Properties

CAS No. : 15307-79-6

Formula: C14H10Cl2NNaO2

Molecular Weight: 318.13

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	Diclofenac sodium (GP 45840) is a non-steroidal anti-inflammatory agent (NSAID) with antipyretic and analgesic actions. It is primarily available as the sodium salt.
Targets(IC50)	Apoptosis,COX
In vitro	Diclofenac inhibits Wnt/beta-catenin signaling without altering the level of beta-catenin protein and reduces the expression of beta-catenin/TCF-dependent genes. Diclofenac induces the degradation of IkappaBalpha, which increases free nuclear factor kappaB (NF-kappaB) in colon cancer cells. [1] Diclofenac suppresses both fast tetrodotoxin-sensitive (TTX-S) and the slow tetrodotoxin-resistant (TTX-R) sodium currents in a dose-dependent manner. Diclofenac produces shifts of the steady-state inactivation curves in the hyperpolarizing direction in both types of sodium currents in a dose-dependent manner. Diclofenac may bind to sodium channels with a greater affinity when they are in the inactivated state than when they are in the resting state. [2] Diclofenac results in a severe accumulation of protein in the tubular cells (so called hyaline droplet degeneration), macrophage infiltration and structural alterations (dilation, vesiculation) of the endoplasmic reticulum (ER) in the proximal and distal renal tubules of kidney. Diclofenac also results in shortening of podocytes and their retraction from the basal lamina, a thickening of the basal lamina, the formation of desmosomes, and necrosis of endothelial cells in the renal corpuscles of kidney. [3]
In vivo	Diclofenac (0.01 to 0.2 mM) stimulates state-4 respiration and slightly inhibits state 3 in rats, decreasing the respiratory control ratio, while the membrane potential is decreased or collapsed (depending on the drug concentration). [4]

Solubility Information

Solubility	DMSO: 250 mg/mL (785.84 mM),Sonication is recommended. H2O: 15.9 mg/mL (49.98 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1434 mL	15.7168 mL	31.4337 mL
5 mM	0.6287 mL	3.1434 mL	6.2867 mL
10 mM	0.3143 mL	1.5717 mL	3.1434 mL
50 mM	0.0629 mL	0.3143 mL	0.6287 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

Kirchheiner J, et al. Br J Clin Pharmacol. 2003 Jan;55(1):51-61.
Sun S L, Xu H J, Jiang X L, et al.Discovery of 1-(Phenylsulfonyl)-1, 2, 3, 4-tetrahydroquinoline Derivative as Orally Bioavailable and Safe RORγt Inverse Agonists for Potential Treatment of Rheumatoid Arthritis.Journal of Medicinal Chemistry.2024