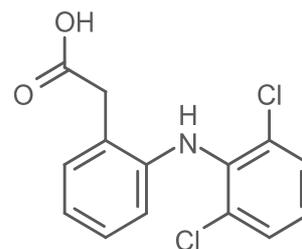


Product Name	:	Diclofenac sodium
Catalog Number	:	T1555
CAS Number	:	15307-79-6
Molecular Formula	:	C ₁₄ H ₁₀ Cl ₂ NNaO ₂
Molecular Weight	:	318.13
Appearance	:	Solid
Melting Point	:	288-290°C



Description: Diclofenac sodium is a non-steroidal anti-inflammatory agent (NSAID) with antipyretic and analgesic actions. It is primarily available as the sodium salt.

Storage: 2 years -80°C in solvent; 3 years -20°C powder;

Solubility	DMSO	31.8 mg/mL (100 mM)
	water	15.9 mg/mL (50 mM)
	(< 1 mg/ml refers to the product slightly soluble or insoluble)	

Receptor (IC50)	COX-1	60nM
	COX-2	200nM

In vitro Activity

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 I κ B α , 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 Activity

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]

Reference

1. Kirchheiner J, et al. Br J Clin Pharmacol. 2003 Jan;55(1):51-61.

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