Carprofen

Cat. No.: HY-B1227

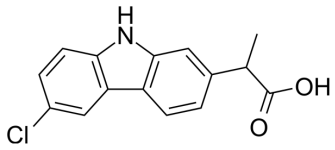
CAS No.: 53716-49-7

Molecular Formula: $C_{15}H_{12}ClNO_2$

Molecular Weight: 273.71

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	1 year
	-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (365.35 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6535 mL	18.2675 mL	36.5350 mL
	5 mM	0.7307 mL	3.6535 mL	7.3070 mL
	10 mM	0.3654 mL	1.8268 mL	3.6535 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: ≥ 2.08 mg/mL (7.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.60 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Carprofen is a nonsteroid anti-inflammatory agent, acts as a multi-target FAAH/COX inhibitor, with IC_{50}s of 3.9 μM, 22.3 μM and 78.6 μM for COX-2, COX-1 and FAAH, respectively.

IC_{50} & Target

IC50: 3.9 μM (COX-2), 22.3 μM (COX-1), 78.6 μM (FAAH)[1]

In Vitro

Carprofen (Compound 1) is a nonsteroid anti-inflammatory agent, acts as a multi-target FAAH/COX inhibitor, with IC_{50}s of 3.9 μM, 22.3 μM and 78.6 μM for COX-2, COX-1 and FAAH, respectively[1].
Carprofen (10 μg/mL) shows cytoprotective effects in CCL and CaCL cells and decreases apoptosis of both cells. Carprofen (10 μg/mL) exhibits nonsignificant increase in PGE2 concentration, compared with that of the respective CCL or CaCL

	controls[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Carprofen (2.2 mg/kg, p.o.) significantly decreases PGE2 concentration in blood of dogs on days 3 and 10. Carprofen also decreases amounts of gastric PGE2 synthesis on day 3, but the inhibition is not obvious on day 10. In addition, Carprofen shows no activity against gastric PGE1 synthesis in dogs on day 3 and 10[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	Cruciate ligament cells are used and incubated with DMEM supplemented with 10% FCS for 24 hours to synchronize cell cycles. The cell cultures are then preincubated without (control) or with a nonselective COX inhibitor (acetylsalicylic acid) or a preferential COX-2 inhibitor (Carprofen, meloxicam, or robenacoxib) to ssess whether NSAIDs prevented apoptosis when the cells are subsequently incubated with SNP. For all cell cultures except those designated as controls, 1 of 3 concentrations of 1 of the 4 NSAIDs (10, 100, or 200 µg of acetylsalicylic acid/mL; 0.1, 1, or 10 µg of Carprofend/mL; 0.1, 1, or 10 µg of meloxicame/mL; or 0.1, 1, or 10 µg of robenacoxibf/mL) is added to the culture media of each cell culture, and the cells are incubated for 2 hours[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Dogs[3] Each dog receives Carprofen (2.2 mg/kg, PO, q 12 h), deracoxib (2 mg/kg, PO, q 24 h), or etodolac (10 to 15 mg/kg, PO, q 24 h) for 10 days in a crossover design with a 30- to 60-day washout period between treatments. On days 0, 3, and 10 of each treatment period, blood is collected for evaluation of TXB2 and PGE2 concentrations. In addition, anesthesia is induced with propofol (4 mg/kg) and maintained with isoflurane. Synovial fluid is collected from both stifle joints by use of a standard arthrocentesis technique for evaluation of PGE2 concentrations. Gastroscopy is performed during each anesthetic episode, and 3 to 6 endoscopic biopsy specimens are collected from the gastric antrum for evaluation of PGE1 and PGE2 synthesis. On day 0 for each dog, a gastric biopsy specimen is placed into a Campylobacter-like organism test kit and evaluated for up to 24 hours for Helicobacter spp. Stained slides (H&E) of gastric biopsy specimens are also evaluated for the presence of underlying inflammation[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Death Differ. 2022 Sep 14.
- Mol Cell Biol. 2021 Apr 19;MCB.00016-21.

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