Product Data Sheet

Product Name: Bromfenac Sodium
Cat. No.: GC13039

Chemical Properties

Cas. No.	91714-93-1		
Chemical Name	sodium;2-[2-amino-3-(4-bromobenzoyl)phenyl]acetate		
SMILES	C1=CC(=C(C(=C1)CC(=O)[O-])N)C(=O)C2=CC=C(C=C2)Br.[Na+]		
Formula	$C_{15}H_{11}BrNO_3.Na$	M.Wt	356.15
Solubility	≥ 14.7mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Bromfenac Sodium		

Protocol

Cell experiment [1]:

Cell lines	Corneal epithelial cells
Preparation method	The solubility of this compound in DMSO is > 14.7 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below - 20 °C for several months.
Reacting condition	1, 4, 12, 24 and 48 hrs

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Applications	Compared with Bromfenac Sodium, the cellular metabolic activity of Diclofenac and Fluorometholone markedly decreased after 12-hr exposure. However, the K+ and Cl- concentrations, pH and osmolarity were similar among different treatment groups. In additioin, Bromfenac Sodium significantly promoted cell migration, as well as restored wound gap after 48-hr exposure, compared with Diclofenac and Fluorometholone.

Animal experiment [2]:

Animal models	A rabbit model of ocular inflammation
Dosage form	50 μL 0.09%
Applications	In a rabbit model of ocular inflammation, Bromfenac Sodium almost completely inhibited lipopolysaccharide (LPS)-induced increases in fluorescein isothiocyanate (FITC)-dextran in the anterior chamber as well as the contralateral eye. In addition, Bromfenac Sodium significantly inhibited LPS-induced increases in PGE2 concentrations in the aqueous humor.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

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References:

[1]. Lee JS, Kim YH, Park YM. The Toxicity of Nonsteroidal Anti-inflammatory Eye Drops against Human Corneal Epithelial Cells in Vitro. J Korean Med Sci. 2015 Dec;30(12):1856-64.

[2]. Waterbury LD, Silliman D, Jolas T. Comparison of cyclooxygenase inhibitory activity and ocular anti-inflammatory effects of ketorolac tromethamine and bromfenac sodium. Curr Med Res Opin. 2006 Jun;22(6):1133-40.

Background

Bromfenac (sodium hydrate) is a nonsteroidal anti-inflammatory drug (NSAID), which has anti-inflammatory activity(1) Bromfenac (sodium hydrate) (1 mg/kg, i.v.) is metabolited into an unusual conjugate, bromfenac N-glucoside, in rats bile(2) Bromfenac (sodium hydrate) permeation was found to be 1.62-fold higher through ChS-CS-NPs

References:
[1]. Kirkman SK et al. Isolation and identification of bromfenac glucoside from rat bile. Drug Metab Dispos. 1998 Jul;26(7):720-3.
[2]. Abdullah TA et al. Chondroitin sulfate-chitosan nanoparticles for ocular delivery of bromfenac sodium: Improved permeation, retention, and penetration. Int J Pharm Investig. 2016 Apr-Jun;6(2):96-105.

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