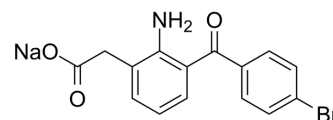


## Bromfenac sodium

<b>Cat. No.:</b>	HY-B1888A
<b>CAS No.:</b>	91714-93-1
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>11</sub> BrNNaO <sub>3</sub>
<b>Molecular Weight:</b>	356.15
<b>Target:</b>	COX
<b>Pathway:</b>	Immunology/Inflammation
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 11.36 mg/mL (31.90 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		2.8078 mL	14.0390 mL	28.0781 mL
		<b>5 mM</b>		0.5616 mL	2.8078 mL	5.6156 mL
	<b>10 mM</b>		0.2808 mL	1.4039 mL	2.8078 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1.14 mg/mL (3.20 mM); Clear solution  2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 1.14 mg/mL (3.20 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Bromfenac sodium is a potent and orally active inhibitor of COX, with IC <sub>50</sub> s of 5.56 and 7.45 nM for COX-1 and COX-2, respectively. Bromfenac sodium can be used in ocular inflammation research <sup>[1]</sup> .	
<b>IC<sub>50</sub> &amp; Target</b>	COX-1 5.56 nM (IC <sub>50</sub> )	COX-2 7.45 nM (IC <sub>50</sub> )
<b>In Vitro</b>	Bromfenac (0-80 µg/mL; 24 h) can inhibit transforming growth factor-β2-induced epithelial-mesenchymal transition in HLEC-B3 in a concentration-dependent manner <sup>[2]</sup> . Bromfenac (80 µg/mL; 48 h) inhibits transforming growth factor-β2-induced epithelial-mesenchymal transition in human anterior capsules <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

### Cell Viability Assay<sup>[2]</sup>

Cell Line:	transforming growth factor- $\beta$ 2-treated human anterior capsules.
Concentration:	80 $\mu$ g/mL
Incubation Time:	48 hours
Result:	Suppressed transforming growth factor- $\beta$ 2-induced epithelial-mesenchymal transition in primary lens epithelial cells (LECs).

### Cell Migration Assay<sup>[2]</sup>

Cell Line:	HLEC-B3 cells
Concentration:	0, 20, 40, 60, and 80 $\mu$ g/mL
Incubation Time:	24 hours
Result:	Suppressed transforming growth factor- $\beta$ 2-induced cell migration in HLEC-B3 cells, and exhibited inhibition of the over-expression of epithelial-mesenchymal transition markers.

### In Vivo

Bromfenac (0.0032-3.16%; 100 or 200  $\mu$ L; rubbed onto the backs) produces significant anti-inflammatory activity at concentrations as low as 0.1% (4 h pretreatment time) or 0.32% (18 h pretreatment time) in rats<sup>[3]</sup>.  
Bromfenac (0.032-3.16%; 100  $\mu$ L; rubbed onto the paws) produces dose-related anti-inflammatory activity in rats<sup>[3]</sup>.  
Bromfenac (0.032-1.0%; 50  $\mu$ L) is 26 times more potent than indomethacin in blocking the erythema when applied directly onto the skin area exposed to UV light in guinea pigs<sup>[3]</sup>.  
Bromfenac (0.0032-0.1%; 50  $\mu$ L; rubbed onto the uninjected paw for 4 h per day and 5 days per week) produces a dose and time dependent reduction in the paw volume of both hind limbs in rats<sup>[3]</sup>.  
Bromfenac (0.32%; 50  $\mu$ L; rubbed onto the abdomen) produces significant blockade of abdominal constriction to ACh challenge in mice<sup>[3]</sup>.  
Bromfenac (eyedrop instillation; 1  $\mu$ L (0.09%) per eye; twice-daily; 4 w) partially reduces corneal staining, and becomes so more slowly by the 4-week time point<sup>[4]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats (150-250 g) are injected carrageenan <sup>[2]</sup>
Dosage:	0.0032, 0.01, 0.032, 0.1, 0.32, 1.0, 3.16% (100 or 200 $\mu$ L)
Administration:	Rubbed onto the backs before 1-72 h of injected carrageenan
Result:	Produced significant anti-inflammatory activity when applied 1, 2, and 4 h prior to carrageenan challenge at 0.32%. Applied 1 or 4 h prior to carrageenan challenge was active, but not when applied 24 h (or longer) prior to challenge at 0.2%.

## REFERENCES

- [1]. Tetsuo Kida, et al. Pharmacokinetics and efficacy of topically applied nonsteroidal anti-inflammatory drugs in retinochoroidal tissues in rabbits. *PLoS One*. 2014 May 5;9(5):e96481.
- [2]. Xiaobo Zhang, et al. Drug-eluting intraocular lens with sustained bromfenac release for conquering posterior capsular opacification. *Bioact Mater*. 2021 Jul 23;9:343-357.
- [3]. Nolan JC, et al. The topical anti-inflammatory and analgesic properties of bromfenac in rodents. *Agents Actions*. 1988 Aug; 25(1-2): 77-85.

---

[4]. Kaevalin Lekhanont, et al. Effects of topical anti-inflammatory agents in a botulinum toxin B-induced mouse model of keratoconjunctivitis sicca. J Ocul Pharmacol Ther. 2007 Feb;23(1):27-34.

---

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA