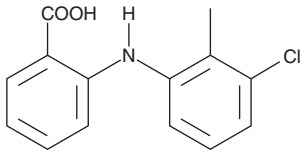
PRODUCT INFORMATION

Tolfenamic Acid

Item No. 70480

CAS Registry No.: 13710-19-5
Formal Name: 2-[(3-chloro-2-methylphenyl) amino]-benzoic acid
MF: $C_{14}H_{12}ClNO_2$
FW: 261.7
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Tolfenamic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the tolfenamic acid in the solvent of choice, which should be purged with an inert gas. Tolfenamic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tolfenamic acid in these solvents is approximately 11.5, 39, and 59 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of tolfenamic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tolfenamic acid in PBS (pH 7.0) and basic PBS is approximately 0.05 mg/ml and approximately 50 mg/ml in acidic PBS. We do not recommend storing the aqueous solution for more than one day.

Description

Tolfenamic acid is a non-steroidal anti-inflammatory drug (NSAID) with anticancer activity.[1-5] It is selective for COX-2 over COX-1 in canine DH82 monocyte/macrophage cells (IC_{50}s = 3.53 and >51.2 µg/ml, respectively).[1] Tolfenamic acid inhibits calcium influx in human polymorphonuclear leukocytes (PMNLs) induced by N-formyl-L-methionyl-L-leucyl-L-phenylalanine (fMLP; Item No. 21495) or the calcium ionophore A23187 (Item Nos. 11016 | 22030) in a concentration-dependent manner.[2] It decreases protein levels of the transcription factors Sp1, Sp3, and Sp4 in PANC-1 and L3.6pl cells when used at a concentration of 50 µM and inhibits proliferation of PANC-1, L3.6pl, and PANC-28 cells in a concentration-dependent manner.[4] Tolfenamic acid (50 and 100 µM) decreases the viability of and induces apoptosis in MDA-MB-231 cells.[5] It reduces tumor growth in an MDA-MB-231 mouse xenograft model when administered at doses of 25 and 50 mg/kg. Tolfenamic acid (150 µmol/kg) reduces carrageenan-induced paw edema in mice by 24%.[3]

References

1. Kay-Mugford, P., Benn, S.J., LaMarre, J., *et al. Am. J. Vet. Res.* **61(7)**, 802-810 (2000).
2. Kankaanranta, H. and Moilanen, E. *Mol. Pharmacol.* **47(5)**, 1006-1013 (1995).
3. Galanakis, D., Kourounakis, A.P., Tsiakitzis, K.C., *et al. Bioorg. Med. Chem. Lett.* **14(14)**, 3639-3643 (2004).
4. Abdelrahim, M., Baker, C.H., Abbruzzese, J.L., *et al. J. Natl. Cancer Inst.* **98(12)**, 855-868 (2006).
5. Kim, H.J., Cho, S.D., Kim, J., *et al. J. Clin. Biochem. Nutr.* **52(1)**, 21-26 (2013).

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