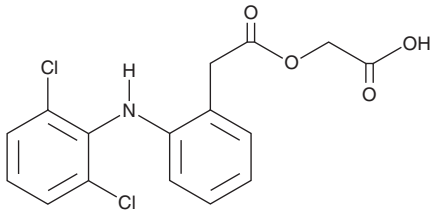
PRODUCT INFORMATION

Aceclofenac

Item No. 28620

CAS Registry No.:	89796-99-6
Formal Name:	2-[(2,6-dichlorophenyl)amino]-benzeneacetic acid, carboxymethyl ester
MF:	$C_{16}H_{13}Cl_2NO_4$
FW:	354.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 277 nm
Supplied as:	A 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

Aceclofenac is supplied as a solid. A stock solution may be made by dissolving the aceclofenac in the solvent of choice, which should be purged with an inert gas. Aceclofenac is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of aceclofenac in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Aceclofenac is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, aceclofenac should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Aceclofenac has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Aceclofenac is a non-steroidal anti-inflammatory drug (NSAID) and a derivative of diclofenac (Item Nos. 22983 | 70680).[1] Aceclofenac inhibits the production of prostaglandin E_2 (PGE_2; Item No. 14010) and thromboxane B_2 (TXB_2; Item No. 19030) by 25 and 30%, respectively, in cell-free assays when used at concentrations of 10 and 100 µM, respectively. It selectively inhibits COX-2 in isolated whole blood (IC_{50}s = 0.8 and >100 µM for COX-2 and COX-1, respectively) and inhibits the production of PGE_2 in patient-derived human rheumatoid synovial cells (IC_{50}s = 1.9-29.4 nM).[1,2] Aceclofenac reduces IL-1β-induced increases in IL-6 production by 21 and 43% in cultured chondrocytes without and with osteoarthritic lesions, respectively, when used at a concentration of 30 µM.[1] Aceclofenac inhibits carrageenan-induced paw edema (ED_{50} = 3.6 mg/kg) and abscess formation (ED_{30} = 1.1 mg/kg) in rats.[3] It also inhibits an increase in joint diameter in a rat model of arthritis induced by complete Freund's adjuvant (CFA).[4]

References

1. Henrotin, Y., de Leval, X., Mathy-Hartet, M., *et al.* In vitro effects of aceclofenac and its metabolites on the production by chondrocytes of inflammatory mediators. *Inflamm. Res.* **50(8)**, 391-399 (2001).
2. Yamazaki, R., Kawai, S., Matsumoto, T., *et al.* Hydrolytic activity is essential for aceclofenac to inhibit cyclooxygenase in rheumatoid synovial cells. *J. Pharmacol. Exp. Ther.* **289(2)**, 676-681 (1999).
3. Grau, M., Guasch, J., Montero, J.L., *et al.* The pharmacological profile of aceclofenac, a new nonsteroidal antiinflammatory and analgesic drug. *Agents Actions Suppl.* **32**, 125-129 (1991).
4. Poorvashree, J. and Suneela, D. Novel drug delivery of dual acting prodrugs of hydroxychloroquine with aryl acetic acid NSAIDs: Design, kinetics and pharmacological study. *Drug Deliv. Transl. Res.* **7(5)**, 709-730 (2017).

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