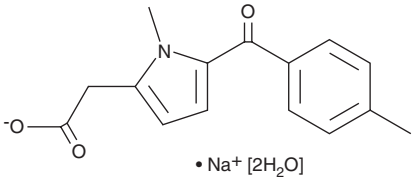
PRODUCT INFORMATION

Tolmetin (sodium salt hydrate)

Item No. 18195

CAS Registry No.:	64490-92-2
Formal Name:	1-methyl-5-(4-methylbenzoyl)-1H-pyrrole-2-acetic acid, monosodium, dihydrate
MF:	$C_{15}H_{14}NO_3 \bullet Na\ [2H_2O]$
FW:	315.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 255, 320 nm
Supplied as:	A crystalline solid
Storage:	-20
Stability:	≥4 years



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

Laboratory Procedures

Tolmetin (sodium salt hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the tolmetin (sodium salt hydrate) in the solvent of choice, which should be purged with an inert gas. Tolmetin (sodium salt hydrate) is soluble in the organic solvent DMSO at a concentration of approximately 2 mg/ml.

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 tolmetin (sodium salt hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tolmetin (sodium salt hydrate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Tolmetin is a non-steroidal anti-inflammatory drug that non-selectively inhibits human COX-1 and -2 with IC_{50} values of 0.35 and 0.82 µM, respectively.[1] It also inhibits aldo-keto reductases (*e.g.*, IC_{50} = 2.39 µM for human aldose reductase), a family of enzymes that catalyze the NADPH-dependent reduction of carbonyl groups in a number of important steroid, metabolic, and prostanoid molecules.[2,3]

References

1. Warner, T.D., Giuliano, F., Vojnovic, I., *et al*. Nonsteroid drug selectivities for cyclo-oxygenase-1 rather than cyclo-oxygenase-2 are associated with human gastrointestinal toxicity: A full *in vitro* analysis. *Proc. Natl. Acad. Sci. USA* **96**, 7563-7568 (1999).
2. Zheng, X., Zhang, L., Zhai, J., *et al*. The molecular basis for inhibition of sulindac and its metabolites towards human aldose reductase. *FEBS Lett*. **586(1)**, 55-59 (2012).
3. Flanagan, J.U., Yosaatmadja, Y., Teague, R.M., *et al*. Crystal structures of three classes of non-steroidal anti-inflammatory drugs in complex with aldo-keto reductase 1C3. *PLoS One* **7(8)**, 1-16 (2012).

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