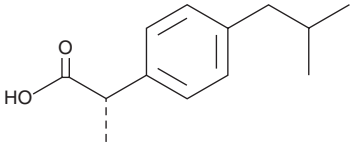
PRODUCT INFORMATION

(S)-Ibuprofen

Item No. 16793

CAS Registry No.:	51146-56-6
Formal Name:	αS-methyl-4-(2-methylpropyl)-benzeneacetic acid
Synonyms:	Dexibuprofen, (+)-Ibuprofen
MF:	$C_{13}H_{18}O_2$
FW:	206.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 220 nm
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

(S)-Ibuprofen is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-ibuprofen in the solvent of choice, which should be purged with an inert gas. (S)-Ibuprofen is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (S)-ibuprofen in ethanol and DMSO is approximately 50 mg/ml and approximately 30 mg/ml in DMF.

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 (S)-ibuprofen can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (S)-ibuprofen in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(S)-Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID) and a COX-1 and COX-2 inhibitor (IC_{50}s = 2.6 and 1.53 µM, respectively).[1] It inhibits NF-κB transactivation in a reporter assay using Jurkat T cells (IC_{50} = 61.7 µM).[2] (S)-Ibuprofen reduces aggregation in platelet-rich plasma and washed isolated human platelets (IC_{50}s = 88 and 0.6 µM, respectively).[3] It decreases superoxide formation and β-glucuronidase release induced by N-formyl-Met-Leu-Phe (fMLP; Item No. 21495), as well as leukotriene B_4 (LTB_4; Item No. 20110) formation induced by calcimycin (A23187; Item No. 11016), in human polymorphonuclear (PMN) cells (IC_{50}s = 0.50, 0.53, and 0.14 µM, respectively). (S)-Ibuprofen increases the latency to withdrawal in hot plate and tail-flick tests in mice (ED_{50}s = 64 and 54 mg/kg, respectively), as well as reduces paw swelling in a mouse model of carrageenan-induced paw edema (ED_{50} = 57 mg/kg).[4] Formulations containing (±)-ibuprofen have been used in the treatment of fever and mild-to-severe pain.

References

1. Barnett, J., Chow, J., Ives, D., *et al. Biochim. Biophys. Acta* **1209(1)**, 130-139 (1994).
2. Scheuren, N., Bang, H., Münster, T., *et al. Br. J. Pharmacol.* **123(4)**, 645-652 (1998).
3. Villanueva, M., Heckenberger, R., Strobach, H., *et al. Br. J. Clin. Pharmacol.* **35(3)**, 235-242 (1993).
4. Bonabello, A., Galmozzi, M.R., Canaparo, R., *et al. Anesth. Analg.* **97(2)**, 402-408 (2003).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM