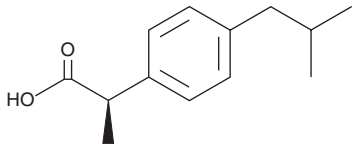
PRODUCT INFORMATION

(R)-Ibuprofen

Item No. 16794

CAS Registry No.:	51146-57-7
Formal Name:	αR-methyl-4-(2-methylpropyl)-benzeneacetic acid
Synonym:	(-)-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

(R)-Ibuprofen is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-ibuprofen in the solvent of choice, which should be purged with an inert gas. (R)-Ibuprofen is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of (R)-ibuprofen in these solvents is approximately 60, 50, and 45 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 (R)-ibuprofen can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (R)-ibuprofen in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(R)-Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID) and an isomer of (±)-ibuprofen (Item No. 70280).[1] Unlike (S)-ibuprofen (Item No. 16793), (R)-ibuprofen does not inhibit COX-1 or COX-2 *in vitro* (IC_{50}s = 360 and 15.6 µM, respectively) but is converted to the active (S)-enantiomer *in vivo*.[2,3] It inhibits NF-κB transactivation in a reporter assay using Jurkat T cells (IC_{50} = 121.8 µM).[1] (R)-Ibuprofen 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 = 0.43, 0.58, and 0.22 µM, respectively).[2] Formulations containing (±)-ibuprofen have been used in the treatment of fever and mild-to-severe pain.

References

1. Scheuren, N., Bang, H., Münster, T., *et al.* Modulation of transcription factor NF-κB by enantiomers of the nonsteroidal drug ibuprofen. *Br. J. Pharmacol.* **123(4)**, 645-652 (1998).
2. Villanueva, M., Heckenberger, R., Strobach, H., *et al.* Equipotent inhibition by R(-)-, S(+)- and racemic ibuprofen of human polymorphonuclear cell function *in vitro*. *Br. J. Clin. Pharmacol.* **35(3)**, 235-242 (1993).
3. Jeffrey, P., Tucker, G.T., Bye, A., *et al.* The site of inversion of R(–)-ibuprofen: Studies using rat in-situ isolated perfused intestine/liver preparations. *J. Pharm. Pharmacol.* **43(10)**, 715-720 (1991).

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