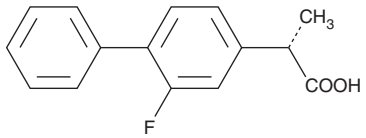
PRODUCT INFORMATION

(S)-Flurbiprofen

Item No. 10004207

CAS Registry No.: 51543-39-6
Formal Name: (S)-(+)-2-fluoro-α-methyl-4-biphenylacetic acid
MF: $C_{15}H_{13}FO_2$
FW: 244.3
Purity: ≥99%
UV/Vis.: λ_{max}: 247 nm
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥2 years



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

Laboratory Procedures

(S)-Flurbiprofen is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-flurbiprofen in an organic solvent purged with an inert gas. (S)-Flurbiprofen is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (S)-flurbiprofen in these solvents is at least 10 mg/ml in DMSO and 25 mg/ml in ethanol and 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)-flurbiprofen can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of (S)-flurbiprofen in PBS (pH 7.2) is at least 0.9 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(S)-Flurbiprofen is the COX-active enantiomer of the non-selective COX inhibitor flurbiprofen (Item No. 70250) with IC_{50} values of 0.48 and 0.47 µM for COX-1 and COX-2, respectively, in guinea pig whole blood.[1] It inhibits the release of 6-keto prostaglandin $F_{1\alpha}$ (6-keto-$PGF_{1\alpha}$; Item No. 15210) and thromboxane B_2 (TXB_2; Item No. 19030) from rat whole blood, gastric mucosa, lung, and jejunal tissue *ex vivo* in a dose-dependent manner.[2] (S)-Flurbiprofen (1 nM) inhibits basal and bradykinin-, serotonin-, and histamine-stimulated prostaglandin E_2 (PGE_2) release from isolated skin flaps of rat lower hind paws.[3] It also inhibits release of the neuroinflammatory marker calcitonin gene-related peptide (CGRP; Item Nos. 24405 | 24725 | 24728) when used at a concentration of 1 µM. *In vivo*, (S)-flurbiprofen reduces the number of flinches per minute in the formalin test in rats, indicating antinociceptive activity.[4]

References

1. Carabaza, A., Cabre, F., Rotllan, E., *et al.* Stereoselective inhibition of inducible cyclooxygenase by chiral nonsteroidal antiinflammatory drugs. *J. Clin. Pharmacol* **36(6)**, 505-512 (1996).
2. Peskar, B.M., Kluge, S., Peskar, B.A., *et al.* Effects of pure enantiomers of flurbiprofen in comparison to racemic flurbiprofen on eicosanoid release from various rat organs *ex vivo*. *Prostaglandins* **42(6)**, 515-531 (1991).
3. Averbeck, B., Peisler, M., Izydorczyk, I., *et al.* Inflammatory mediators do not stimulate CGRP release if prostaglandin synthesis is blocked by S(+)-flurbiprofen in isolated rat skin. *Inflamm. Res.* **52(12)**, 519-523 (2003).
4. Malmberg, A.B. and Yaksh, T.L. Antinociception produced by spinal delivery of the S and R enantiomers of flurbiprofen in the formalin test. *Eur. J. Pharmacol.* **256(2)**, 205-209 (1994).

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