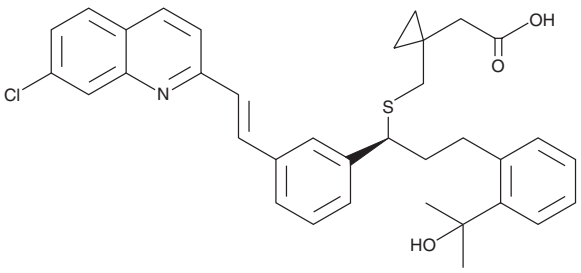
PRODUCT INFORMATION

Montelukast

Item No. 35779

CAS Registry No.: 158966-92-8
Formal Name: 1-[[[(1R)-1-[3-[(1E)-2-(7-chloro-2-quinolinyl)ethenyl]phenyl]-3-[2-(1-hydroxy-1-methylethyl) phenyl]propyl]thio]methyl]-cyclopropaneacetic acid
Synonym: MK-476
MF: $C_{35}H_{36}ClNO_3S$
FW: 586.2
Purity: ≥98%
UV/Vis.: λ_{max}: 245, 284, 327, 359 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

Montelukast is supplied as a solid. A stock solution may be made by dissolving the montelukast in the solvent of choice, which should be purged with an inert gas. Montelukast is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of montelukast in these solvents is approximately 2 mg/ml.

Description

Montelukast is a cysteinyl leukotriene 1 ($CysLT_1$) receptor antagonist (IC_{50} = 4.9 nM in HEK293 cell membranes expressing the human receptor).[1] It is selective for $CysLT_1$ over $CysLT_2$ receptors (IC_{50} = >10,000 nM in COS-7 cell membranes expressing the human receptor).[2] Montelukast inhibits bronchoconstriction induced by leukotriene D_4 (LTD_4; Item No. 20310) in anesthetized guinea pigs (ED_{50} = 69 nmol/kg, p.o.).[3] It inhibits ovalbumin-induced airway hyperresponsiveness and increases in the number of total cells and eosinophils in bronchoalveolar lavage fluid (BALF) in a mouse model of allergic asthma when administered at doses of 3 and 10 mg/kg.[4] Formulations containing montelukast have been used in the treatment of asthma, allergic rhinitis, and exercise-induced bronchoconstriction.

References

1. Sarau, H.M., Ames, R.S., Chambers, J., *et al.* Identification, molecular cloning, expression, and characterization of a cysteinyl leukotriene receptor. *Mol. Pharmacol.* **56(3)**, 657-663 (1999).
2. Heise, C.E., O'Dowd, B.F., Figueroa, D.J., *et al.* Characterization of the human cysteinyl leukotriene 2 receptor. *J. Biol. Chem.* **275(39)**, 30531-30536 (2000).
3. Cabré, F., Carabaza, A., García, A.M., *et al.* Pharmacological profile of MEN91507, a new $CysLT_1$ receptor antagonist. *Eur. J. Pharmacol.* **451(3)**, 317-326 (2002).
4. Eum, S.Y., Maghni, K., Hamid, Q., *et al.* Involvement of the cysteinyl-leukotrienes in allergen-induced airway eosinophilia and hyperresponsiveness in the mouse. *Am. J. Respir. Cell Mol. Biol.* **28(1)**, 25-32 (2003).

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