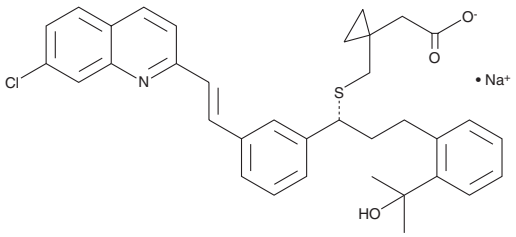
PRODUCT INFORMATION

Montelukast (sodium salt)

Item No. 10008318

CAS Registry No.: 151767-02-1
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, monosodium salt
Synonym: MK-476
MF: $C_{35}H_{35}ClNO_3S \bullet Na$
FW: 608.2
Purity: ≥98%
UV/Vis.: λ_{max}: 212, 284, 328, 345, 359 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

Montelukast (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the montelukast (sodium salt) in the solvent of choice, which should be purged with an inert gas. Montelukast (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of montelukast (sodium salt) in these solvents is approximately 30 mg/ml. It is also soluble in water at a concentration of 10 mg/ml.

Montelukast (sodium salt) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, montelukast (sodium salt) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Montelukast (sodium salt) has a solubility of approximately 0.15 mg/ml in a 1:9 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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. Mol. Pharmacol.* **56(3)**, 657-663 (1999).
2. Heise, C.E., O'Dowd, B.F., Figuerosa, D.J., *et al. J. Biol. Chem.* **275(39)**, 30531-30536 (2000).
3. Cabré, F., Carabaza, A., García, A. M., *et al. Eur. J. Pharmacol.* **451(3)**, 317-326 (2002).
4. Eum, S. Y., Maghni, K., Hamid, Q., *et al. Am. J. Respir. Cell Mol. Biol.* **28(1)**, 25-32 (2003).

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