Montelukast dicyclohexylamine

Cat. No.: HY-13315B

CAS No.: 577953-88-9

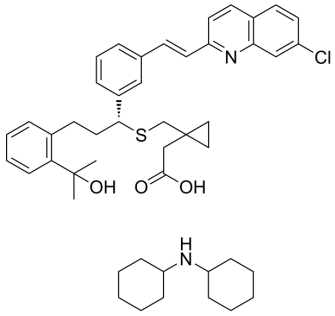
Molecular Formula: $C_{47}H_{59}ClN_2O_3S$

Molecular Weight: 767.5

Target: Leukotriene Receptor

Pathway: GPCR/G Protein

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Montelukast (MK0476) dicyclohexylamine is a potent, selective and orally active antagonist of cysteinyl leukotriene receptor 1 ($CysLT_1$). Montelukast dicyclohexylamine can be used for the reseach of asthma and liver injury. Montelukast dicyclohexylamine also has an antioxidant effect in intestinal ischemia-reperfusion injury, and could reduce cardiac damage. Montelukast dicyclohexylamine decreases eosinophil infiltration into the asthmatic airways. Montelukast dicyclohexylamine can also be used for COVID-19 research[1][2][3][4].

IC_{50} & Target

$CysLT_1$

In Vitro

Montelukast (5 μM; 1 h) inhibits APAP (Acetaminophen) (HY-66005)-induced cell damage[1].
Montelukast (0.01-10 μM; 30 min) diminishes the 5-oxo-ETE–induced cell migration and modulates the activation of the plasmin-plasminogen system[3].
Montelukast (10 μM; 18 h) modulates the activation of MMP-9[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Migration Assay [3]

Cell Line:	Eosinophils
Concentration:	0.01-10 μM
Incubation Time:	30 min
Result:	Diminished the 5-oxo-ETE–induced cell migration.

Western Blot Analysis[3]

Cell Line:	Eosinophils
Concentration:	10 μM
Incubation Time:	18 h
Result:	Reduced the 5-oxo-ETE–boosted MMP-9 secretion.

In Vivo

Montelukast (3 mg/kg; oral gavage) protects against APAP-induced hepatotoxicity in mice[1].
Montelukast (1 mg/kg; miniosmotic pump administration) reduces the airway remodeling changes observed in OVA-treated

mice and blocks the actions of cysteinyl leukotrienes (LT) C4, D4, and E4 mediated by the CysLT1 receptor[2]. Montelukast (1 mg/kg; miniosmotic pump administration) reduces the elevated levels of IL-4 and IL-13 found in the BAL fluid of OVA-treated mice[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6J mice (8-week-old; 22-25 g) are induced acute hepatic injury[1]
Dosage:	3 mg/kg
Administration:	Oral gavage 1 h after saline or APAP administration
Result:	Decreased serum levels of alanine transaminase (ALT) and aspartate aminotransferase (AST), and alleviated liver damage.

CUSTOMER VALIDATION

- J Cachexia Sarcopenia Muscle. 2022 Jun 9.
- Artif Cell Nanomed B. 2019 Dec;47(1):4234-4239.
- Eur J Pharmacol. 2022 May 15;923:174892.
- Naunyn Schmiedebergs Arch Pharmacol. 2023 Feb 27.
- Patent. US20230404992A1.

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REFERENCES

[1]. Pu S, et, al. Montelukast Prevents Mice Against Acetaminophen-Induced Liver Injury. Front Pharmacol. 2019 Sep 18; 10:1070.

[2]. William RHJ, et, al. A role for cysteinyl leukotrienes in airway remodeling in a mouse asthma model. Am J Respir Crit Care Med. 2002 Jan 1; 165(1): 108-16.

[3]. Langlois A, et al. Montelukast regulates eosinophil protease activity through a leukotriene-independent mechanism. J Allergy Clin Immunol. 2006;118(1):113-119.

[4]. Khan AR, et al. Montelukast in hospitalized patients diagnosed with COVID-19. J Asthma. 2022 Apr;59(4):780-786.

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