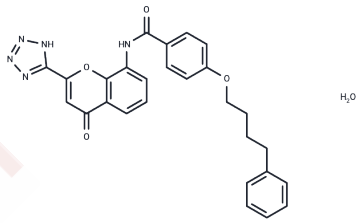
Data Sheet (Cat.No.T63291)

TargetMol

Pranlukast hemihydrate

Chemical Properties



CAS No. : 150821-03-7

Formula: C27H23N5O4 0.5H2O

Molecular Weight: 490.52

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Pranlukast hemihydrate (ONO-1078 hemihydrate) is a selective and potent leukotriene (LT) antagonist with anti-asthmatic activity that inhibits [3H]LTD4 and [3H]LTE4 binding to lung membranes and antagonizes LTC4-induced constriction of guinea-pig airways. Pranlukast hemihydrate is used in the study of asthma. Pranlukast hemihydrate is used in the study of asthma.
Targets(IC50)	Endogenous Metabolite,Leukotriene Receptor
In vitro	In radioligand binding assays, Pranlukast hemihydrate inhibited the binding of [3H]LTE4, [3H]LTD4, and [3H]LTC4 to lung membranes with Ki values of 0.63 nM, 0.99 nM, and 5640 nM, respectively.Pranlukast hemihydrate inhibited [3H]LTC4 binding competitively. The inhibition of [3H]LTC4 binding by Pranlukast hemihydrate was characterized by competitive antagonism. In functional assays, Pranlukast hemihydrate competitively antagonized LTC4- and LTD4-induced constriction of tracheal and parenchymal bands in guinea pigs, with pA2 values ranging from 7.70 to 10.71. Pranlukast hemihydrate antagonized LTC4-induced constriction of guinea pig tracheal and lung parenchymal bands, even in the presence of an inhibitor of the transition from LTC4 to LTD4. Pranlukast hemihydrate antagonized LTC4-induced tracheal constriction in guinea pigs even in the presence of an inhibitor of the conversion of LTC4 to LTD4 (pA2=7.78). In addition, Pranlukast hemihydrate significantly reversed the long-term contraction induced by LTD4, but had no significant effect on KCl and BaCl2-induced tracheal contraction in guinea pigs. [1] As a CysLT1 receptor antagonist, Pranlukast hemihydrate (10 μM) inhibits oxygen-glucose deprivation (OGD)-induced nuclear translocation of CysLT1 receptors. The effects of Pranlukast hemihydrate on receptor translocation were evaluated in the study with the 5-lipoxygenase inhibitor Zileuton. The results showed that Pranlukast hemihydrate effectively inhibited the nuclear translocation of CysLT1 receptor after 6 hours of OGD, whereas Zileuton did not show such an effect. [2]
In vivo	Mice were injected subcutaneously with different doses of Pranlukast hemihydrate (40, 20, and 10 mmol/kg), AA-861 (20, 10, and 5 mmol/kg), indomethacin (40 mmol/kg), and a control group 30 minutes before LPS injection. Mice treated with AA-861 and Pranlukast hemihydrate showed significantly lower mortality compared to controls. Pretreatment with carrageenan (CAR, 5 mg per mouse, intraperitoneally) sensitized mice to the effects of LPS. Although the survival rate of solvent-only treated mice was only

In vivo	20% at 72 hours after LPS (50 μg per mouse, i.v.) injection, subcutaneous injection of AA-861 (20 mmol/kg) or Pranlukast hemihydrate (40 mmol/kg) significantly increased the survival rate of mice. [3]

Solubility Information

Solubility	DMSO: 20 mg/mL (40.77 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble) (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0387 mL	10.1933 mL	20.3865 mL
5 mM	0.4077 mL	2.0387 mL	4.0773 mL
10 mM	0.2039 mL	1.0193 mL	2.0387 mL
50 mM	0.0408 mL	0.2039 mL	0.4077 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Obata T, et al. In vitro antagonism of ONO-1078, a newly developed anti-asthma agent, against peptide leukotrienes in isolated guinea pig tissues. Jpn J Pharmacol. 1992 Nov;60(3):227-37.
Fang SH, et al. Nuclear translocation of cysteinyl leukotriene receptor 1 is involved in oxygen-glucose deprivation-induced damage to endothelial cells. Acta Pharmacol Sin. 2012 Dec;33(12):1511-7.
Ogata M, et al. Protective effects of a leukotriene inhibitor and a leukotriene antagonist on endotoxin-induced mortality in carrageenan-pretreated mice. Infect Immun. 1992 Jun;60(6):2432-7.