LY255283

Cat. No.: HY-15744

CAS No.: 117690-79-6

Molecular Formula: $C_{19}H_{28}N_4O_3$

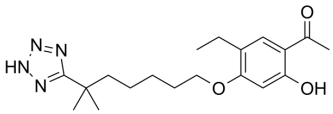
Molecular Weight: 360.45

Target: Leukotriene Receptor

Pathway: GPCR/G Protein

Storage: -20°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (277.43 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7743 mL	13.8715 mL	27.7431 mL
	5 mM	0.5549 mL	2.7743 mL	5.5486 mL
	10 mM	0.2774 mL	1.3872 mL	2.7743 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (6.94 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.94 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.94 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

LY255283 is a LTB_4 receptor (BLT2) antagonist, with an IC_{50} of ~100 nM for [^{3}H]LTB_4 binding to guinea pig lung membranes[1][2][3][4].

IC_{50} & Target

LTB_4

~100 nM (IC_{50}, LTB_4 binds to guinea pig lung membranes)

In Vitro

LY255283 competitively reduces conlractilc responses of lung parcnchyma to LTB, (pA_2 = 7.2)[2].

LY255283 (10 μM, 7 days) significantly suppresses the invasiveness of highly aggressive 253 J-BV bladder cancer cells[4].

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

Cell Viability Assay[4]

Cell Line:	253 J-BV cells.
Concentration:	5 or 10 μM.
Incubation Time:	7 days.
Result:	Inhibition of BLT2 signaling attenuates aggressive migration by 253 J-BV cells.

In Vivo

LY255283 (3, 30 mg/kg) ameliorates lipopolysaccharide-induced ARDS in pigs, possibly by blocking the recruitment of activated PMNs into alveoli in a dose-dependent fashion[3].
LY255283 (2.5 mg/kg, ip) inhibits transitional cell carcinoma metastasis in mice models. The result suggests that a BLT2–Nox–ROS–NF–κB cascade plays a critical role in bladder cancer invasion and metastasis[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Mice (253 J-BV cells injected)[4].
Dosage:	2.5 mg/kg.
Administration:	IP injected 3 and 5 days after injection of cells.
Result:	By 12 weeks after injection, in mice treated with LY255283 only 0-3 nodules formed per lung, and histological analysis confirmed that the number of micrometastatic lesions was markedly reduced.

CUSTOMER VALIDATION

- J Med Chem. 2022 Jan 7.

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REFERENCES

[1]. R M Schultz, et al. Effects of two leukotriene B4 (LTB4) receptor antagonists (LY255283 and SC-41930) on LTB4-induced human neutrophil adhesion and superoxide production. Prostaglandins Leukot Essent Fatty Acids. 1991 Aug;43(4):267-71.

[2]. S A Silbaugh, et al. Pulmonary actions of LY255283, a leukotriene B4 receptor antagonist. Eur J Pharmacol. 1992 Nov 13;223(1):57-64.

[3]. P S Wollert, et al. LY255283, a novel leukotriene B4 receptor antagonist, limits activation of neutrophils and prevents acute lung injury induced by endotoxin in pigs. Surgery. 1993 Aug;114(2):191-8.

[4]. Eun-Young Kim, et al. BLT2 promotes the invasion and metastasis of aggressive bladder cancer cells through a reactive oxygen species-linked pathway. Free Radic Biol Med. 2010 Sep 15;49(6):1072-81.

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