Azithromycin hydrate

Cat. No.: HY-17506A

CAS No.: 117772-70-0

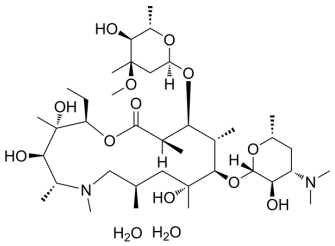
Molecular Formula: $C_{38}H_{76}N_2O_{14}$

Molecular Weight: 785.02

Target: Bacterial; Autophagy; Antibiotic; Parasite

Pathway: Anti-infection; Autophagy

Storage: 4°C, protect from light, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (127.39 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	1.2739 mL	6.3693 mL	12.7385 mL
	5 mM	0.2548 mL	1.2739 mL	2.5477 mL
	10 mM	0.1274 mL	0.6369 mL	1.2739 mL

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

BIOLOGICAL ACTIVITY

Description

Azithromycin hydrate is a macrolide antibiotic useful for the treatment of a number of bacterial infections.

IC_{50} & Target

Macrolide

In Vitro

Azithromycin (2 μM) augments rhinovirus-induced IFNβ expression in primary bronchial epithelial cells from asthmatics, which is associated with over-expression of RIG-I like receptors and repression of viral replication. Knockdown of MDA5, but not knockdown of RIG-I, diminishes azithromycin (2 μM)-enhanced viral-induced IFNβ expression in asthmatic primary bronchial epithelial cells[1]. Azithromycin specifically reduces MMP-9 mRNA and protein levels without affecting NF-κB in endotoxin-challenged monocytic THP-1 cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Azithromycin (50 mg/kg) has no effect on bronchoalveolar lavage inflammatory parameters and LDH levels in a mouse model of asthma exacerbation. Azithromycin induces neither general inflammatory parameters nor LDH release in a mouse model of asthma exacerbation, and augments expression of interferon-stimulated genes and the pattern recognition receptor MDA5 but not RIG-I in exacerbating mice[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

THP-1 cells (10^6 cells in 1 mL RPMI medium, without antibiotics, growth factors or serum) are seeded in each well of 24-well plates and allowed to settle for 1 hour. Next, 50 µL of the test compound is added followed by 50 µL of LPS (final concentration of 10 µg/mL). After 24h (37°C and 5% CO_2) the supernatants and cell pellets are collected (1200 rpm, 5 min). THP-1 cell viability is tested using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT). MTT is dissolved at 2 mg/mL in PBS and aliquots are stored at -20°C. The MTT assay is performed according to the suppliers instructions. Absorbance of MTT converted into formazan is measured at a wavelength of 570 nm with background subtraction at 630 nm.

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

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2020 Jul 21;7(17):2001374.
- Acta Pharm Sin B. 2021 Mar 11.
- Mol Ther. 2022 Feb 18;S1525-0016(22)00102-2.
- Theranostics. 2022 Jan 1;12(3):1187-1203.
- Cell Rep. 2023 Dec 12;42(12):113563.

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REFERENCES

[1]. Menzel M, et al. Azithromycin augments rhinovirus-induced IFNβ via cytosolic MDA5 in experimental models of asthma exacerbation. Oncotarget. 2017 Mar 18.

[2]. Vandooren J, et al. Differential inhibition of activity, activation and gene expression of MMP-9 in THP-1 cells by azithromycin and minocycline versus bortezomib: A comparative study. PLoS One. 2017 Apr 3;12(4):e0174853.

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