Product Data Sheet

Product Name: Celgosivir (MBI 3253)
Cat. No.: GC32191

Chemical Properties

Cas. No.	121104-96-9		
SMILES	O[C@@H]1[C@]2([H])[C@@H](O)[C@H](O)[C@@H](OC(CCC)=O)CN2CC1		
Formula	$C_{12}H_{21}NO_5$	M.Wt	259.3
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Celgosivir (MBI 3253)		

Protocol

Cell experiment:

The cytotoxicity of Celgosivir is measured by the Cell titer-Glo Luminescent cell viability assay. The luminescence signals for cells treated with the test compounds are compared to those for cells treated with the maximum tolerated DMSO to determine the 50% cytotoxic concentration[3].

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Animal experiment:	Mice: To model ADE, mice are injected i.p. with 20 μg /mouse of mouse monoclonal antibody against DENV E protein one day prior to infection. For treatment during infection, celgosivir (50 mg/kg) is injected i.p. twice daily for 5 days, starting from day 0, 1 or 2. Blood is collected at days 1, 3 and 7 by submandibular bleeding. Survival of mice is followed until day 10 and survival curves are plotted[3].

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References:

[1]. Taylor DL, et al. Inhibition of alpha-glucosidase I of the glycoprotein-processing enzymes by 6-O-butanoylcastanospermine (MDL 28,574) and its consequences in human immunodeficiency virus-infected T cells. Antimicrob Agents Chemother. 1994 Aug;38(8):1780-7.
[2]. Rathore AP, et al. Celgosivir treatment misfolds dengue virus NS1 protein, induces cellular pro-survival genes andprotects against lethal challenge mouse model. Antiviral Res. 2011 Dec;92(3):453-60.
[3]. Whitby K, et al. Action of celgosivir (6 O-butanoyl castanospermine) against the pestivirus BVDV: implications for the treatment of hepatitis C. Antivir Chem Chemother. 2004 May;15(3):141-51.
[4]. Watanabe S, et al. Dose- and schedule-dependent protective efficacy of celgosivir in a lethal mouse model for dengue virus infection informs dosing regimen for a proof of concept clinical trial. Antiviral Res. 2012 Oct;96(1):32-5.

Background

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Celgosivir (MBI 3253; MDL 28574; MX3253) is a novel α-glucosidase I inhibitor, an enzyme that plays a critical role in viral maturation by initiating the processing of the N-linked oligosaccharides of viral envelope glycoproteins.[1]

The quantity of THP-1 cells is 1 × 105 , cells were washed once with media and replaced with 500 µl with a serial 4-fold dilution starting from 200 µM or 50 µM.[3]

Celgosivir, stored at 100 mg/ml in PBS at 30 °C, were diluted with PBS before each dosing to obtain 1 mg/200 µl (50 mg/kg) or 0.2 mg/200 µl (10 mg/kg). [3]

[1]. Durantel D. Celgosivir, an alpha-glucosidase I inhibitor for the potential treatment of HCV infection. Curr Opin Investig Drugs. 2009 Aug, 10(8):860-70. [2]. Whitby K et al. Action of celgosivir (6 O-butanoyl castanospermine) against the pestivirus BVDV: implications for thetreatment of hepatitis C. Antivir Chem Chemother, 2004 May, 15(3):141-51. [3]. Satoru Watanabe，Kitti Wing-Ki Chan et al. Optimizing celgosivir therapy in mouse models of dengue virus infection of serotypes 1 and 2: The search for a window for potential therapeutic efficacy. Antiviral Research, March 2016, Pages 10-19.

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