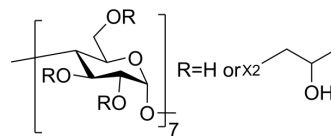


HP-β-CD

Cat. No.:	HY-101103		
CAS No.:	128446-35-5		
Target:	Biochemical Assay Reagents		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (Need ultrasonic) H ₂ O : 50 mg/mL (Need ultrasonic)
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: Saline Solubility: 200 mg/mL (Infinity mM); Clear solution; Need ultrasonic Add each solvent one by one: PBS Solubility: 100 mg/mL (Infinity mM); Clear solution; Need ultrasonic and warming and heat to 60°C Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	HP-β-CD ((2-Hydroxypropyl)-β-cyclodextrin) is a widely used drug delivery vehicle to improve the stability and bioavailability.
In Vitro	<p>Cell treatment with HP-β-CD results in the activation of the transcription factor EB, a master regulator of lysosomal function and autophagy, and in enhancement of the cellular autophagic clearance capacity^[1]. HP-β-CD treatment reduces intracellular cholesterol resulting in significant leukemic cell growth inhibition through G2/M cell-cycle arrest and apoptosis. The IC₅₀ values for HP-β-CD after 72 hours exposure are in the range of 3.86-10.09 mM. HP-β-CD also shows anticancer effects against CML cells expressing a T315I BCR-ABL mutation (that confers resistance to most ABL tyrosine kinase inhibitors), and hypoxia-adapted CML cells that have characteristics of leukemic stem cells. In addition, colony forming ability of human primary AML and CML cells is inhibited by HP-β-CD^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	HP-β-CD administration promotes transcription factor EB-mediated clearance of proteolipid aggregates that accumulate due to inefficient activity of the lysosome-autophagy system in cells derived from a patient with a lysosomal storage

disorder^[1]. Intraperitoneal injection of HP- β -CD significantly improves survival in leukemia mouse models. Systemic administration of HP- β -CD to mice has no significant adverse effects^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay

Cells are incubated with HP- β -CD at various concentrations (5, 7.5, 10, 15, 20 mM) for 72 hours. Cell viability is assessed using a trypan blue dye exclusion method and cell proliferation is evaluated using a modified methyl-thiazol-diphenyl-tetrazolium (MTT) assay^[2].

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

Animal Administration ^[2]

Mice: Mice are intraperitoneally injected with 200 μ L vehicle (saline) or (2-Hydroxypropyl)- β -cyclodextrin (50 or 150 mM) for 20 consecutive days 3 days after transplantation, and survival is monitored daily. Leukemic cell engraftment is confirmed by detection of GFP-positive cells in the recipient's BM using flow cytometry^[2].

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

CUSTOMER VALIDATION

- Nano Today. 2024 Feb, 54, 102058.
- Nat Commun. 2022 May 31;13(1):3022.
- Cell Rep Med. 2023 Apr 18;4(4):101015.
- J Immunother Cancer. 2023 Feb;11(2):e005837.
- J Neuroinflammation. 2023 Dec 7;20(1):293.

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REFERENCES

[1]. Song W, et al. 2-Hydroxypropyl- β -cyclodextrin promotes transcription factor EB-mediated activation of autophagy: implications for therapy. J Biol Chem. 2014 Apr 4;289(14):10211-22.

[2]. Yokoo M, et al. 2-Hydroxypropyl- β -Cyclodextrin Acts as a Novel Anticancer Agent. PLoS One. 2015 Nov 4;10(11):e0141946.

Caution: Product has not been fully validated for medical applications. For research use only.

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