SZABO SCANDIC

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# Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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See the following pages for more information!

## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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# HP-β-CD

**Cat. No.:** HY-101103

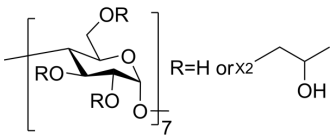
**CAS No.:** 128446-35-5

**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)

$H_2O$ : 50 mg/mL (Need ultrasonic)

**In Vivo**

1. Add each solvent one by one: Saline
   Solubility: 200 mg/mL (Infinity mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (Infinity mM); Clear solution; Need ultrasonic and warming and heat to 60°C
3. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution
5. 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**

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 $IC_{50}$ 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].

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

**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].<br>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].<br>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 μL 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].<br>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.

See more customer validations on www.MedChemExpress.com

## 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.



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