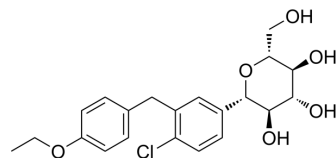


Dapagliflozin

Cat. No.:	HY-10450
CAS No.:	461432-26-8
Molecular Formula:	C ₂₁ H ₂₅ ClO ₆
Molecular Weight:	408.87
Target:	SGLT
Pathway:	Membrane Transporter/Ion Channel
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (244.58 mM)
 H₂O : 50 mg/mL (122.29 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		2.4458 mL	12.2288 mL	24.4577 mL
	5 mM		0.4892 mL	2.4458 mL	4.8915 mL
	10 mM		0.2446 mL	1.2229 mL	2.4458 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 33.33 mg/mL (81.52 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline
Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 95% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (5.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (5.09 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (5.09 mM); Clear solution
- Add each solvent one by one: 1% DMSO >> 99% saline
Solubility: ≥ 0.5 mg/mL (1.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Dapagliflozin (BMS-512148), a new type of agent used to treat diabetes mellitus (DM), is a competitive sodium/glucose cotransporter 2 (SGLT2) inhibitor, which results in excretion of glucose into the urine ^[1] . Dapagliflozin induces HIF1 expression and attenuates renal IR injury ^[2] .																
IC₅₀ & Target	SGLT2																
In Vitro	<p>Dapagliflozin (0-10 μM) 24 hours) significantly increases the cell survival in hypoxic HK2 cell in a dose-dependent manner^[2]. Dapagliflozin (0-10 μM) 2 hours) increases the HIF1 expression, increases AMPK and EKR phosphorylation in hypoxic HK2 cells, but shows no effect on the phosphorylation of AMPK and ERK in normoxic HK2 cells^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[1]</p> <table><tr><td>Cell Line:</td><td>Hypoxic HK2 cells</td></tr><tr><td>Concentration:</td><td>0 μM, 1 μM, 2 μM, 5 μM, 10 μM</td></tr><tr><td>Incubation Time:</td><td>24 hours</td></tr><tr><td>Result:</td><td>Improved the cell viability in a dose-dependent manner compared with control cells.</td></tr></table> <p>Western Blot Analysis^[1]</p> <table><tr><td>Cell Line:</td><td>Hypoxic HK2 cells, Normoxic HK2 cells</td></tr><tr><td>Concentration:</td><td>0 μM, 1 μM, 2 μM, 5 μM, 10 μM</td></tr><tr><td>Incubation Time:</td><td>24 hours</td></tr><tr><td>Result:</td><td>Induced HIF1 expression in hypoxic and normoxic HK2 cells.</td></tr></table>	Cell Line:	Hypoxic HK2 cells	Concentration:	0 μM, 1 μM, 2 μM, 5 μM, 10 μM	Incubation Time:	24 hours	Result:	Improved the cell viability in a dose-dependent manner compared with control cells.	Cell Line:	Hypoxic HK2 cells, Normoxic HK2 cells	Concentration:	0 μM, 1 μM, 2 μM, 5 μM, 10 μM	Incubation Time:	24 hours	Result:	Induced HIF1 expression in hypoxic and normoxic HK2 cells.
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In Vivo	<p>Dapagliflozin (oral administration; 10 mg/kg) causes a marked increase in urinary glucose in SGLT2i-mice, suppresses BAT thermogenesis by reducing sympathetic nerve activity and enhances hepatic gluconeogenesis and glycogenolysis^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																

CUSTOMER VALIDATION

- EBioMedicine. 2022, 86: 104342.
- Cardiovasc Res. 02 November 2020.
- Acta Pharmacol Sin. 2021 Dec 1.
- Mol Metab. 2019 Jan;19:1-12.
- Biomed Pharmacother. 2023 Nov 4:168:115840.

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REFERENCES

[1]. Pedersen MG, et al. Dapagliflozin stimulates glucagon secretion at high glucose: experiments and mathematical simulations of human A-cells. Sci Rep. 2016 Aug 18;6:31214.

[2]. Chiba Y, et al. Dapagliflozin, a Sodium-Glucose Co-Transporter 2 Inhibitor, Acutely Reduces Energy Expenditure in BAT via Neural Signals in Mice. PLoS One. 2016 Mar 10;11(3):e0150756.

[3]. Chang YK, et al. Dapagliflozin, SGLT2 Inhibitor, Attenuates Renal Ischemia-Reperfusion Injury. PLoS One. 2016 Jul 8;11(7):e0158810.

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

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