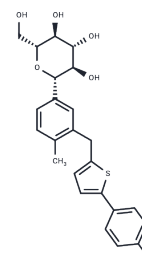


## Canagliflozin

### Chemical Properties

CAS No. :	842133-18-0
Formula:	C <sub>24</sub> H <sub>25</sub> F <sub>0</sub> S <sub>5</sub>
Molecular Weight:	444.52
Storage:	Keep away from direct sunlight, Keep away from moisture, Store at low temperature Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



### Biological Description

Description	Canagliflozin (JNJ 28431754AAA) is a selective SGLT2 inhibitor that inhibits CHO cells expressing mSGLT2, rSGLT2, and hSGLT2 (IC <sub>50</sub> =2/3.7/4.4 nM). Canagliflozin can be used for the treatment of type II diabetes mellitus (T2DM).
Targets(IC <sub>50</sub> )	SGLT
In vitro	<p><b>METHODS:</b> CHOK-hSGLT1 and CHOK-hSGLT2 cells were incubated with Canagliflozin (0.01-10000 nM) for 10 min and sodium-dependent glucose uptake was detected.</p> <p><b>RESULTS:</b> Canagliflozin inhibited 14C-AMG uptake in CHO-hSGLT1 and CHOK-hSGLT2 cells with IC<sub>50</sub> of 684±159 nM and 4.4±1.2 nM, respectively.[1]</p> <p><b>METHODS:</b> Human umbilical vein endothelial cell HUVECs were treated with Canagliflozin (1-50 µM) for 24 h and DNA synthesis was measured to monitor cell proliferation.</p> <p><b>RESULTS:</b> Treatment of HUVECs with Canagliflozin resulted in a concentration-dependent inhibition of DNA synthesis. The ability of Canagliflozin to block DNA synthesis was observed at concentrations (5-10 µM) achieved in the plasma of patients receiving Canagliflozin. In addition, higher concentrations of Canagliflozin (50 µM) virtually eliminated DNA synthesis. [2]</p>
In vivo	<p><b>METHODS:</b> To study the efficacy of treatment of type 2 diabetes mellitus (T2DM), Canagliflozin (0.1-30 mg/kg, 0.5% hydroxypropyl methylcellulose) was administered by gavage to four animal models. The animal models included: (1) male C57BL/6J mice fed a high-fat diet; (2) male C57BL/ksj-db/db hyperglycemic mice; (3) male Zucker fatty (ZF) obese, insulin-resistant rats; and (4) male ZDF obese, hyperglycemic rats.</p> <p><b>RESULTS:</b> Canagliflozin decreased RTG and increased UGE, improved glycemic control and β-cell function, and reduced body weight gain in a rodent model of T2DM. [1]</p>
Cell Research	Cells from the rat skeletal muscle cell line, L6, is used to test the effect of Canagliflozin on glucose transporter 1 (GLUT1) activity. Cells are maintained in Dulbecco's modified Eagle's medium containing 5.6 mM glucose supplemented with 10% fetal bovine serum, are seeded in 24-well plates at a density of 3 × 10 <sup>5</sup> cells/well and cultured for 24 hours in an atmosphere of 5% CO <sub>2</sub> at 37 °C. Cells are rinsed twice with Krebs' ringer phosphate HEPES buffer (pH 7.4, 150 mM NaCl, 5 mM KCl, 1.25 mM MgSO <sub>4</sub> , 1.25 mM CaCl <sub>2</sub> , 2.9 mM Na <sub>2</sub> HPO <sub>4</sub> , 10 mM HEPES) and are pre-incubated with the solutions of Canagliflozin (250 µL, 10 µM) for 5 minutes at room temperature. The transport reaction is initiated by

## A DRUG SCREENING EXPERT

Cell Research	adding 50 $\mu$ L of 4.5 mM 2-DG (a substrate for GLUTs)/3H-2-DG (0.625 $\mu$ Ci) followed by incubation for 15 minutes at room temperature. The 2-DG uptake is halted by aspiration of the incubation mixture. Cells are immediately washed 3 times with ice-cold PBS. Samples are extracted with 0.3 N NaOH, and radioactivity is determined by liquid scintillation.(Only for Reference)
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### Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 250 mg/mL (562.4 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (11.25 mM),Solution. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2496 mL	11.2481 mL	22.4962 mL
5 mM	0.4499 mL	2.2496 mL	4.4992 mL
10 mM	0.225 mL	1.1248 mL	2.2496 mL
50 mM	0.045 mL	0.225 mL	0.4499 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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Huang H, Kung F L, Huang Y W, et al.Sensitization of cancer cells to paclitaxel-induced apoptosis by canagliflozin. Biochemical Pharmacology.2024: 116140.

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