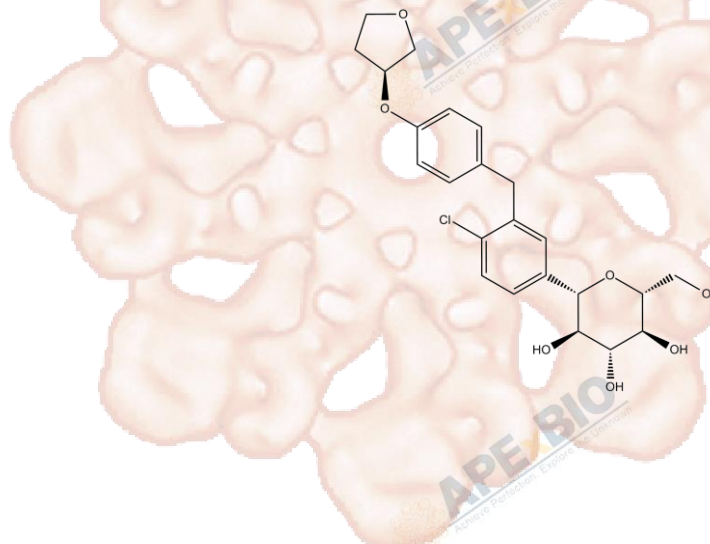


## Empagliflozin (BI 10773)

<b>Cat. No.:</b>	A4601
<b>CAS No.:</b>	864070-44-0
<b>Formula:</b>	C <sub>23</sub> H <sub>27</sub> ClO <sub>7</sub>
<b>M.Wt:</b>	450.91
<b>Synonyms:</b>	
<b>Target:</b>	Metabolism
<b>Pathway:</b>	SGLT
<b>Storage:</b>	Store at -20°C



### Solvent & Solubility

insoluble in H<sub>2</sub>O;  $\geq 20.75$  mg/mL in DMSO;  $\geq 7.06$  mg/mL in EtOH with ultrasonic

In Vitro

Preparing Stock Solutions	Mass		1mg	5mg	10mg
	Solvent	Concentration			
		<b>1 mM</b>	2.2177 mL	11.0887 mL	22.1774 mL
		<b>5 mM</b>	0.4435 mL	2.2177 mL	4.4355 mL
		<b>10 mM</b>	0.2218 mL	1.1089 mL	2.2177 mL

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

### Biological Activity

Shortsummary

SGLT-2 inhibitor for oral treatment of type 2 diabetes

IC<sub>50</sub> & Target

3.1 nM (SGLT-2)

In Vitro

#### Cell Viability Assay

Cell Line: HK2 cells

Preparation method:

The solubility of this compound in DMSO is > 20.75 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below - 20 °C for several months.

Reacting conditions:

100 or 500 nM; 72 hrs

	Applications:	In HK2 cells, Empagliflozin blocked SGLT2 without causing a compensatory increase in the other glucose transporters. Empagliflozin at both concentrations significantly inhibited high glucose-induced TLR4 expression by $97.2 \pm 8.2\%$ and $64.4 \pm 12.6\%$ , respectively. Besides, at the dose of 500 nM, Empagliflozin significantly inhibited high glucose-induced NF- $\kappa$ B binding by $91.7 \pm 14.9\%$ . In addition, Empagliflozin reduced high glucose-induced secretion of IL-6 by $92.0 \pm 11.7\%$ and $116.5 \pm 19.6\%$ at the doses of 100 and 500 nM, respectively.
In Vivo	<b>Animal experiment</b>	
	Animal models:	ZDF rats and beagle dogs
	Dosage form:	2 mL/kg; i.v. or p.o.
	Applications:	Empagliflozin achieved high exposure in dogs, with plasma concentrations > 100-fold above the IC50 value (measured 24 hrs after administration). In ZDF rat, the total plasma clearance of Empagliflozin was 43 mL/min/kg, while in dogs, was lower at 1.8 mL/min/kg. The Cmax values of Empagliflozin for ZDF rat and dogs were 167 nM and 17254 nM, respectively.
Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.	

## Product Citations

1. Zhou Y, Fan J, et al. "SGLT-2inhibitors reduce glucose absorption from peritoneal dialysis solution bysuppressing the activity of SGLT-2." Biomed Pharmacother. 2019 Jan;109:1327-1338.PMID:30551383
2. Bahia Abbas Moussa, Marianne Alphonse Mahrouse, et al. "Different resolution techniques for management of overlapped spectra: Application for the determination of novel co-formulated hypoglycemic drugs in their combined pharmaceutical dosage form." Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy Available online 20 June 2018.

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## References

- [1]. Panchapakesan, U., et al., Effects of SGLT2 inhibition in human kidney proximal tubular cells--renoprotection in diabetic nephropathy PLoS One, 2013. 8(2): p. e54442.
- [2]. Grempler, R., et al., Empagliflozin, a novel selective sodium glucose cotransporter-2 (SGLT-2) inhibitor: characterisation and comparison with other SGLT-2 inhibitors. Diabetes Obes Metab, 2012. 14(1): p. 83-90.

## Caution

**FOR RESEARCH PURPOSES ONLY.**

**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**



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Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.



## APExBIO Technology

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