Empagliflozin (BI 10773)

**Cat. No.:** A4601  
**CAS No.:** 864070-44-0  
**Formula:** C23H27ClO7  
**M.Wt:** 450.91  
**Synonyms:**  
**Target:** Metabolism  
**Pathway:** SGLT  
**Storage:** Store at -20°C

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**Solvent & Solubility**

Insoluble in H2O; ≥20.75 mg/mL in DMSO; ≥7.06 mg/mL in EtOH with ultrasonic

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Mass</th>
<th>Solvent Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1mg</td>
<td>2.2177 mL</td>
</tr>
<tr>
<td></td>
<td>5mg</td>
<td>11.0887 mL</td>
</tr>
<tr>
<td></td>
<td>10mg</td>
<td>22.1774 mL</td>
</tr>
<tr>
<td>1 mM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.4435 mL</td>
<td>2.2177 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2218 mL</td>
<td>1.1089 mL</td>
</tr>
</tbody>
</table>

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

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**Biological Activity**

**Shortsummary**  
SGLT-2 inhibitor for oral treatment of type 2 diabetes

**IC₅₀ & Target**  
3.1 nM (SGLT-2)

**Cell Viability Assay**

<table>
<thead>
<tr>
<th>Cell Line:</th>
<th>HK2 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method:</td>
<td>The solubility of this compound in DMSO is &gt; 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.</td>
</tr>
<tr>
<td>Reacting conditions:</td>
<td>100 or 500 nM; 72 hrs</td>
</tr>
</tbody>
</table>
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 ± 8.2% and 64.4 ± 12.6%, respectively. Besides, at the dose of 500 nM, Empagliflozin significantly inhibited high glucose-induced NF-κB binding by 91.7 ± 14.9%. In addition, Empagliflozin reduced high glucose-induced secretion of IL-6 by 92.0 ± 11.7% and 116.5 ± 19.6% at the doses of 100 and 500 nM, respectively.

Animal experiment
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


References

Caution
FOR RESEARCH PURPOSES ONLY.
NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.
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. Short term 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.