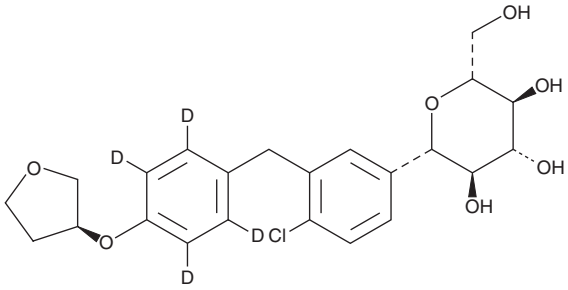
PRODUCT INFORMATION

Empagliflozin-d_4

Item No. 22369

Formal Name: (1S)-1,5-anhydro-1-C-[4-chloro-3-[[4-[[(3S)-tetrahydro-3-furanyl]oxy]phenyl-d_4]methyl]phenyl]-D-glucitol
MF: $C_{23}H_{23}D_4ClO_7$
FW: 454.9
Chemical Purity: ≥98% (Empagliflozin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Empagliflozin-d_4 is intended for use as an internal standard for the quantification of empagliflozin (Item No. 17375) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Empagliflozin-d_4 is supplied as a solid. A stock solution may be made by dissolving the empagliflozin-d_4 in the solvent of choice, which should be purged with an inert gas. Empagliflozin-d_4 is soluble in DMSO.

Description

Empagliflozin is a sodium-glucose cotransporter 2 (SGLT2) inhibitor (IC_{50} = 3.1 nM for the human transporter).[1] It is selective for SGLT2 over SGLT1, -4, -5, and -6 (IC_{50}s = 8.3, 11, 1.1, and 2 µM, respectively). Dietary administration of empagliflozin (0.03% for 10 weeks) reduces non-fasting blood glucose levels, as well as aortic superoxide levels and cardiac interstitial fibrosis, in *db/db* mice.[2] It also decreases the severity of glomerulosclerosis, as well as reduces the escape latency in the Morris water maze, in the same model. Formulations containing empagliflozin have been used in the treatment of type 2 diabetes.

References

1. Grempler, R., Thomas, L., Eckhardt, M., *et al.* Empagliflozin, a novel selective sodium glucose contransporter-2 (SGLT-2) inhibitor: Characterisation and comparison with other SGLT-2 inhibitors. *Diabetes Obes. Metab.* **14(1)**, 83-90 (2012).
2. Lin, B., Koibuchi, N., Hasegawa, Y., *et al.* Glycemic control with empagliflozin, a novel selective SGLT2 inhibitor, ameliorates cardiovascular injury and cognitive dysfunction in obese and type 2 diabetic mice. *Cardiovasc. Diabetol.* **13**, 148 (2014).

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