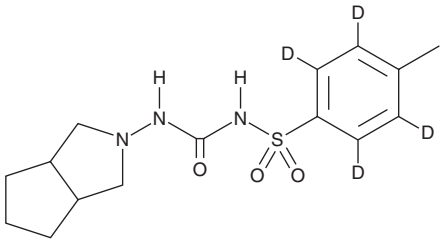
PRODUCT INFORMATION

Gliclazide-d_4

Item No. 33610

CAS Registry No.: 1185039-30-8
Formal Name: N-[[(hexahydrocyclopenta[c]pyrrol-2(1H)-yl)amino]carbonyl]-4-methyl-benzene-2,3,5,6-d_4-sulfonamide
MF: $C_{15}H_{17}D_4N_3O_3S$
FW: 327.4
Chemical Purity: ≥98% (Gliclazide)
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

Gliclazide-d_4 is intended for use as an internal standard for the quantification of gliclazide (Item No. 25503) 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).

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

Description

Gliclazide is a sulfonylurea and an inhibitor of pancreatic β-cell ATP-sensitive potassium (K_{ATP}) channels (IC_{50} = 184 nM for murine β-cells).[1,2] It is selective for pancreatic β-cell over cardiac and arterial smooth muscle cell K_{ATP} channels (IC_{50}s = 19.5 and 37.9 µM, respectively).[1] Gliclazide (5 µM) increases insulin-induced glucose uptake and glucose transporter 4 (GLUT4) translocation to the plasma membrane in a differentiated 3T3L1 adipocyte model of insulin resistance induced by hydrogen peroxide.[3] Gliclazide (5 and 10 µg/ml) reduces LDL oxidation by human aortic smooth muscle cells (HASMCs), decreasing TBARS content and 8-isoprostane levels.[4] It also decreases oxidized LDL-induced HASMC proliferation and monocyte adhesion when used at concentrations ranging from 1 to 10 µg/ml. Gliclazide (5 mg/kg) reduces serum glucose levels and increases glucose uptake by isolated rat hindquarters in a model of diabetes induced by streptozotocin (STZ; Item No. 13104).[5]

References

1. Lawrence, C.L., Proks, P., Rodrigo, G.C., *et al. Diabetologia* **44(8)**, 1019-1025 (2001).
2. Proks, P., Reimann, F., Green, N., *et al. Diabetes* **51(3)**, S368-S376 (2002).
3. Shimoyama, T., Yamaguchi, S., Takahashi, K., *et al. Metabolism* **55(6)**, 722-730 (2006).
4. Mamputu, J.C., and Renier, G. *Metabolism* **50(6)**, 688-695 (2001).
5. Pulido, N., Suarez, A., Casanova, B., *et al. Metabolism* **46(12 Suppl 1)**, 10-13 (1997).

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