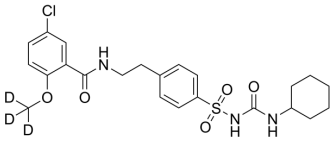
Glyburide-d_3

Cat. No.:	HY-15206S1
CAS No.:	1219803-02-7
Molecular Formula:	$C_{23}H_{25}D_3ClN_3O_5S$
Molecular Weight:	497.02
Target:	P-glycoprotein; Autophagy; Potassium Channel; CFTR; Mitochondrial Metabolism
Pathway:	Membrane Transporter/Ion Channel; Autophagy; Metabolic Enzyme/Protease



Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month

BIOLOGICAL ACTIVITY

Description	Glyburide-d_3 is the deuterium labeled Glibenclamide. Glibenclamide (Glyburide) is an orally active ATP-sensitive K+ channel (KATP) inhibitor and can be used for the research of diabetes and obesity[1]. Glibenclamide inhibits P-glycoprotein. Glibenclamide directly binds and blocks the SUR1 subunits of KATP and inhibits the cystic fibrosis transmembrane conductance regulator protein (CFTR)[3]. Glibenclamide interferes with mitochondrial bioenergetics by inducing changes on membrane ion permeability[4]. Glibenclamide can induce autophagy[5].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. Fernandes MA, et al. Glibenclamide interferes with mitochondrial bioenergetics by inducing changes on membrane ion permeability. J Biochem Mol Toxicol. 2004;18(3):162-169.

[3]. Heo R, et al. The anti-diabetic drug trelagliptin induces vasodilation via activation of Kv channels and SERCA pumps. Life Sci. 2021;283:119868.

[4]. Qiu Y, et al. Glyburide Regulates UCP1 Expression in Adipocytes Independent of KATP Channel Blockade. iScience. 2020;23(9):101446.

[5]. Golstein PE, et al. P-glycoprotein inhibition by glibenclamide and related compounds. Pflugers Arch. 1999;437(5):652-660.

[6]. Zhou J, et al. Glibenclamide-Induced Autophagy Inhibits Its Insulin Secretion-Improving Function in β Cells. Int J Endocrinol. 2019;2019:1265175.

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