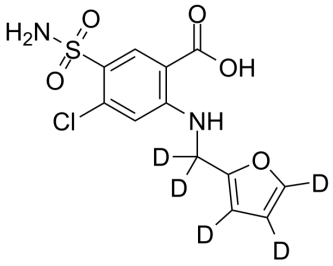
Furosemide-d5

Cat. No.:	HY-B0135S
CAS No.:	1189482-35-6
Molecular Formula:	$C_{12}H_6D_5ClN_2O_5S$
Molecular Weight:	335.77
Target:	NKCC; GABA Receptor
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	Furosemide-d_5 is the deuterium labeled Furosemide. Furosemide is a potent and orally active inhibitor of Na+/K+/2Cl- (NKCC) cotransporter, NKCC1 and NKCC2[1]. Furosemide is also a GABAA receptors antagonist and displays 100-fold selectivity for α6-containing receptors than α1-containing receptors. Furosemide acts as a loop diuretic and used for the study of congestive heart failure, hypertension and edema[2].
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]. C M Gillen, et al. Molecular cloning and functional expression of the K-Cl cotransporter from rabbit, rat, and human. A new member of the cation-chloride cotransporter family. J Biol Chem. 1996 Jul 5;271(27):16237-44.

[3]. S A Thompson, et al. Residues in transmembrane domains I and II determine gamma-aminobutyric acid type AA receptor subtype-selective antagonism by Furosemide sodium. Mol Pharmacol. 1999 Jun;55(6):993-9.

[4]. Shin Hye Kim, et al. Novel Peptide Vaccine GV1001 Rescues Hearing in Kanamycin/Furosemide sodium-Treated Mice. Front Cell Neurosci. 2018 Jan 19;12:3.

[5]. Atsushi Shiozaki , et al. Furosemide sodium, a blocker of Na+/K+/2Cl- cotransporter, diminishes proliferation of poorly differentiated human gastric cancer cells by affecting G0/G1 state. J Physiol Sci. 2006 Dec;56(6):401-6.

[6]. Yuliya V Kucherenko, et al.Inhibitory effect of Furosemide sodium on non-selective voltage-independent cation channels in human erythrocytes.Cell Physiol Biochem. 2012;30(4):863-75.

Caution: Product has not been fully validated for medical applications. For research use only.

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