

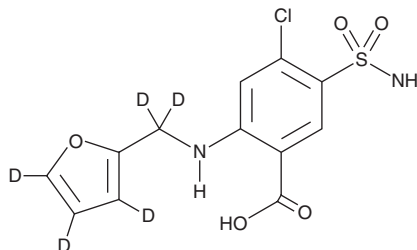
# PRODUCT INFORMATION



## Furosemide-d<sub>5</sub>

Item No. 31789

**CAS Registry No.:** 1189482-35-6  
**Formal Name:** 4-chloro-2-(((furan-2-yl-d<sub>3</sub>)methyl-d<sub>2</sub>)amino)-5-sulfamoylbenzoic acid  
**Synonym:** Frusemide-d<sub>5</sub>  
**MF:** C<sub>12</sub>H<sub>6</sub>ClD<sub>5</sub>N<sub>2</sub>O<sub>5</sub>S  
**FW:** 335.8  
**Chemical Purity:** ≥98% (Furosemide)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>  
**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

Furosemide-d<sub>5</sub> is intended for use as an internal standard for the quantification of furosemide (Item No. 17273) 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).

Furosemide-d<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the furosemide-d<sub>5</sub> in the solvent of choice, which should be purged with an inert gas. Furosemide-d<sub>5</sub> is slightly soluble in methanol and chloroform.

### Description

Furosemide is a loop diuretic and an inhibitor of the Na<sup>+</sup>/K<sup>+</sup>/2Cl<sup>-</sup> (NKCC) cotransporters, NKCC1 and NKCC2 (K<sub>s</sub> = ~10 μM for both).<sup>1,2</sup> *In vivo*, furosemide (0.1 mg/kg, p.o.) increases diuresis in beagle dogs.<sup>3</sup> Furosemide (30 mg/kg) reduces ventricular collagen deposition and fibrosis in a rat model of dilated cardiomyopathy.<sup>4</sup> It is also an inhibitor of carbonic anhydrase I (CAI), CAII, and CAIII (K<sub>s</sub> = 0.052-0.065 μM) and organic ion transporter 1 (OAT1; K<sub>i</sub> = 9.5 μM), as well as a GABA<sub>A</sub> receptor antagonist.<sup>5-7</sup>

### References

1. Gillen, C.M., Brill, S., Payne, J.A., et al. *J. Biol. Chem.* **271**(27), 16237-16244 (1996).
2. Markadieu, N. and Delpire, E. *Pflugers Arch.* **466**(1), 91-105 (2014).
3. Potter, B.M., Ames, M.K., Hess, A., et al. *J. Vet. Cardiol.* **26**, 51-62 (2019).
4. Watanabe, K., Sreedhar, R., Thandavarayan, R.A., et al. *Biofactors* **43**(2), 187-194 (2017).
5. Temperini, C., Cecchi, A., Scozzafava, A., et al. *Bioorg. Med. Chem. Lett.* **18**(8), 2567-2573 (2008).
6. Rajan, S.T., Kumar, M.K., and Ramakrishna, M. *MSN Laboratories*. **WO2014203278A3** (2014).
7. Siess, W., Siegel, F.L., and Lapetina, E.G. *Biochim. Biophys. Acta.* **801**(2), 265-276 (1984).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/29/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)