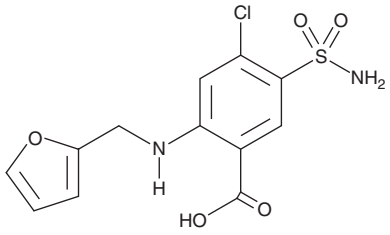
PRODUCT INFORMATION

Furosemide

Item No. 17273

CAS Registry No.:	54-31-9
Formal Name:	5-(aminosulfonyl)-4-chloro-2-[(2-furanylmethyl)amino]-benzoic acid
Synonym:	Frusemide
MF:	$C_{12}H_{11}ClN_2O_5S$
FW:	330.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 234, 273, 343 nm
Supplied as:	A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the furosemide in the solvent of choice, which should be purged with an inert gas. Furosemide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of furosemide in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Furosemide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, furosemide should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Furosemide has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Furosemide is a loop diuretic and an inhibitor of the $Na^+/K^+/2Cl^-$ (NKCC) cotransporters, NKCC1 and NKCC2 (K_is = ~10 µM for both).[1,2] *In vivo*, furosemide (0.1 mg/kg, p.o.) increases diuresis in beagle dogs.[3] Furosemide (30 mg/kg) reduces ventricular collagen deposition and fibrosis in a rat model of dilated cardiomyopathy.[4] It is also an inhibitor of carbonic anhydrase I (CAI), CAII, and CAIII (K_is = 0.052-0.065 µM) and organic ion transporter 1 (OAT1; K_i = 9.5 µM), as well as a $GABA_A$ receptor antagonist.[5-7] This product is also available as an analytical reference standard (Item No. 26298).

References

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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).
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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