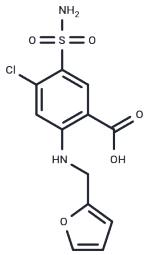
Data Sheet (Cat.No.T0837)

TargetMol

Furosemide

Chemical Properties



CAS No. :	54-31-9
Formula:	C12H11ClN2O5S
Molecular Weight:	330.744
Storage:	Store at low temperature Powder: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	Furosemide is a potent NKCC2 (Na-K-2Cl symporter) inhibitor, used for edema and chronic renal insufficiency.
Targets(IC50)	GABA Receptor,Na-K-Cl cotransporter
In vitro	Furosemide reversibly alters the responses to tones and clicks of the chinchilla basilar membrane in hair cells, causing response-magnitude reductions that are largest (up to 61 dB, averaging 25-30 dB) at low stimulus intensities at the characteristic frequency (CF) and small or nonexistent at high intensities and at frequencies far removed from CF. Furosemide also induces response-phase lags that are largest at low stimulus intensities (averaging 77 degrees) and are confined to frequencies close to CF. [1] Furosemide concentration- and time-dependently increases the formation of nitric oxide andprostacyclin. Furosemide leads to an enhanced release of kinins into the supernatant of the cells. [2] Furosemide reversibly suppresses low Ca2+-induced epileptiform activity in hippocampus proper and blocks or significantly reduces different types of epileptiform discharges in the low Mg2+ model and the 4-aminopyridine model. [3] Furosemide significantly inhibits cell growth in MKN45 cells, but not in MKN28 cells. Furosemide diminishes cell growth by delaying the G(1)-S phase progression in poorly differentiated gastric adenocarcinoma cells, which show high expression and activity of NKCC, but not in moderately differentiated gastric adenocarcinoma cells with low expression and NKCC activity. [4]

Solubility Information

Solubility	DMSO: 252.5 mg/mL (763.43 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (30.23 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (30.23 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0235 mL	15.1176 mL	30.2352 mL
5 mM	0.6047 mL	3.0235 mL	6.047 mL
10 mM	0.3024 mL	1.5118 mL	3.0235 mL
50 mM	0.0605 mL	0.3024 mL	0.6047 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Charak BS, et al. J Antimicrob Chemother,1991, 27(1), 95-104.
Wiemer G, et al. J Pharmacol Exp Ther,1994, 271(3), 1611-1615.
Gutschmidt KU, et al. Neuroscience,1999, 91(4), 1471-1481.
Shiozaki A, et al. J Physiol Sci,2006, 56(6), 401-406.
Olsen SC, et al. Am J Vet Res, 1992, 53(5), 742-747.