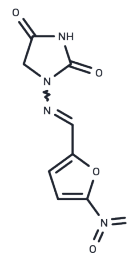


Nitrofurantoin

Chemical Properties

CAS No. :	67-20-9
Formula:	C ₈ H ₆ N ₄ O ₅
Molecular Weight:	238.16
Storage:	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	Nitrofurantoin (Furadantine), an antibiotic, inhibits bacterial DNA, RNA, and cell wall protein synthesis. Activated by bacterial flavoproteins to intermediates that inactivate bacterial ribosomal proteins, Nitrofurantoin is used prophylactically as a urinary anti-infective agent against most gram-positive and gram-negative organisms and for long-term suppression of infections.
Targets(IC50)	Antibacterial, Antibiotic
In vivo	In vivo, nitrofurantoin (25-100 mg/kg, i.m.) reduces E. coli replication and abscess formation in the renal medulla of infected rats in a dose-dependent manner. It prevents kidney and bladder infection in rats following bladder inoculation with clinical isolates of P. mirabilis. Nitrofurantoin also prevents alkalization of urine as well as calculi and abscess formation in a rat model of P. vulgaris urinary tract infection.
Cell Research	HeLa cells are grown and infected with T. gondii for 24 hr in a 96-well microplate, and then treated with drugs. After 24 hr, 20 µl of MTS solution is added directly into culture wells, followed by incubating for 1.5 hr at 37°C and measuring the absorbance at 490 nm in a microplate reader. (Only for Reference)

Solubility Information

Solubility	DMSO: 33.33 mg/mL (139.95 mM), Sonication is recommended. H ₂ O: Insoluble, Ethanol: 10 mg/mL (41.99 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.33 mg/mL (13.98 mM), Solution. 10% DMSO+90% Saline: < 3.33 mg/mL (13.98 mM), Lower concentrations may be soluble, but exact solubility limit is unknown. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1989 mL	20.9943 mL	41.9886 mL
5 mM	0.8398 mL	4.1989 mL	8.3977 mL
10 mM	0.4199 mL	2.0994 mL	4.1989 mL
50 mM	0.084 mL	0.4199 mL	0.8398 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

Yeo SJ, et al. In Vitro and in Vivo Effects of Nitrofurantoin on Experimental Toxoplasmosis. Korean J Parasitol. 2016 Apr;54(2):155-61.

Martin WJ, et al. Am Rev Respir Dis. 1983, 127(4):482-486.

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