

Product data sheet



MedKoo Cat#: 318373 Name: Nitrofurazone CAS: 59-87-0 Chemical Formula: C ₆ H ₆ N ₄ O ₄ Exact Mass: 198.0389 Molecular Weight: 198.1362	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Nitrofurazone is a topical anti-infective agent that is effective against gram-negative and gram-positive bacteria. It is used for superficial wounds and injuries and skin infections. Nitrofurazone has also been administered orally in the treatment of trypanosomiasis.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	97.5	492.09

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.05 mL	25.23 mL	50.47 mL
5 mM	1.01 mL	5.05 mL	10.09 mL
10 mM	0.51 mL	2.52 mL	5.05 mL
50 mM	0.10 mL	0.51 mL	1.01 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Hiraku Y, Sekine A, Nabeshi H, Midorikawa K, Murata M, Kumagai Y, Kawanishi S. Mechanism of carcinogenesis induced by a veterinary antimicrobial drug, nitrofurazone, via oxidative DNA damage and cell proliferation. *Cancer Lett.* 2004 Nov 25;215(2):141-50. doi: 10.1016/j.canlet.2004.05.016. PMID: 15488632.
- Ito K, Kajikawa S, Aisuke N, Hanada T, Doi K. Antioxidants suppress nitrofurazone-induced proliferation of hepatocytes. *Exp Toxicol Pathol.* 2003 Nov;55(4):247-50. doi: 10.1078/0940-2993-00326. PMID: 14703769.

In vivo study

- Ito K, Ishida K, Takeuchi A, Nii A, Okamiya H, Doi K. Nitrofurazone induces non-regenerative hepatocyte proliferation in rats. *Exp Toxicol Pathol.* 2002 Feb;53(6):421-6. doi: 10.1078/0940-2993-00210. PMID: 11926282.
- Shoda T, Yasuhara K, Moriyasu M, Takahashi T, Uneyama C, Hirose M, Mitsumori K. Testicular toxicity of nitrofurazone causing germ cell apoptosis in rats. *Arch Toxicol.* 2001 Jul;75(5):297-305. doi: 10.1007/s002040100231. PMID: 11548123.

7. Bioactivity

Biological target:

Nitrofurazone (Nitrofurazone) is a bactericidal compound used as an antibiotic.

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In vitro activity

Nitrofurazone significantly stimulated the proliferation of estrogen-dependent MCF-7 cells. Nitrofurazone caused Cu(II)-mediated damage to 32P-5'-end-labeled DNA fragments obtained from human genes only when cytochrome P450 reductase was added.

Reference: Cancer Lett. 2004 Nov 25;215(2):141-50. <https://pubmed.ncbi.nlm.nih.gov/15488632/>

In vivo activity

The antibiotic nitrofurazone (NF) has been known for its testicular toxicity; in contrast, much less is known about its effect on the liver. NF was given to male rats for up to 7 consecutive days to evaluate NF-induced effects on the liver. NF increased hepatocyte DNA synthesis and liver weight in a dose-dependent manner, with no apparent histological or biochemical evidence of cell damage or loss.

Reference: Exp Toxicol Pathol. 2002 Feb;53(6):421-6. <https://pubmed.ncbi.nlm.nih.gov/11926282/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.