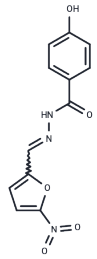
Data Sheet (Cat.No.T1563)

TargetMol

Nifuroxazide

Chemical Properties



CAS No. : 965-52-6

Formula: C12H9N3O5

Molecular Weight: 275.22

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Nifuroxazide (Diarlidan) is an orally available and cell-permeable nitrofuran-based antidiarrheal agent. It has the inhibitory effect against the activation of cellular STAT1/3/5 transcription.
Targets(IC50)	Antibacterial,Antibiotic,STAT
In vivo	Nifuroxazide does not affect the phosphorylation of Akt or MAPK. It inhibits the survival of myeloma cells by reducing the autophosphorylation of Jak kinases, thereby blocking the constitutive phosphorylation of STAT3, but has no effect on normal peripheral blood mononuclear cells. Nifuroxazide decreases the tyrosine phosphorylation of TYK2 and Jak, demonstrating selectivity towards TYK2 and Jak2 without impacting the tyrosine kinases of the EGF receptor or Src kinase. This effect is achieved through the reduction of Jak kinases' autophosphorylation, leading to the inhibition of constitutive phosphorylation of STAT3 in MM (multiple myeloma) cells and the downregulation of the STAT3 target gene, Mcl-1. Consequently, Nifuroxazide reduces the viability of primary myeloma cells and cell lines with activated STAT3 but does not affect normal peripheral blood mononuclear cells. It also blocks the survival signals provided by bone marrow stromal cells to myeloma cells. Compared to interactions with other cellular pathways, Nifuroxazide shows increased cytotoxicity when combined with the histone deacetylase inhibitor Trichostatin or the MEK inhibitor UO126, targeting STAT3.

Solubility Information

Solubility	DMSO: 18.33 mg/mL (66.6 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6335 mL	18.1673 mL	36.3346 mL
5 mM	0.7267 mL	3.6335 mL	7.2669 mL
10 mM	0.3633 mL	1.8167 mL	3.6335 mL
50 mM	0.0727 mL	0.3633 mL	0.7267 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.

Reference

Nelson EA, et al. Blood, 2008, 112(13), 5095-5102.