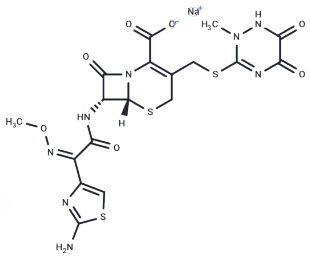
Data Sheet (Cat.No.T66175)

TargetMol

Ceftriaxone Sodium

Chemical Properties



CAS No. : 958633-51-7

Formula: C18H17N8NaO7S3

Molecular Weight: 576.562

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	Ceftriaxone Sodium is a broad-spectrum β-lactam tertiary cephalosporin antibiotic with anti-inflammatory, antitumor, antibacterial, and antioxidant activities.Ceftriaxone Sodium is a covalent GSK3β and Aurora B inhibitor used in the study of sepsis and infective endocarditis.
Targets(IC50)	Antibiotic,Aurora Kinase,GSK-3
In vitro	Ceftriaxone inhibits bacterial cell wall synthesis by means of binding to the penicillin-binding proteins (PBPs). Inhibition of PBPs would in turn inhibit the transpeptidation step in peptidoglycan synthesis which is required for bacterial cell walls. Like other cephalosporins, ceftriaxone is bacteriocidal and exhibits time-dependent killing. Ceftriaxone is a stimulator of EAAT2 expression with neuroprotective effects in both in vitro and in vivo models based in part on its ability to inhibit neuronal cell death by glutamate excitotoxicity.

Solubility Information

Solubility	DMSO: 50 mg/mL (86.72 mM),Sonication is recommended. H2O: 40 mg/mL (69.38 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7344 mL	8.6721 mL	17.3442 mL
5 mM	0.3469 mL	1.7344 mL	3.4688 mL
10 mM	0.1734 mL	0.8672 mL	1.7344 mL
50 mM	0.0347 mL	0.1734 mL	0.3469 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

Zhang Y, et al. Ceftriaxone Protects Astrocytes from MPP(+) via Suppression of NF-κB/JNK/c-Jun Signaling. Mol Neurobiol. 2015 Aug;52(1):78-92.
Zhou J, Huang J, Huang H, et al.Fiber-integrated cantilever-based nanomechanical biosensors as a tool for rapid antibiotic susceptibility testing.Biomedical Optics Express.2023, 14(5): 1862-1873.
Jian X, Yang D, Wang L, et al.CREB1 Silencing Protects Against Inflammatory Response in Rats with Deep Vein Thrombosis Through Reducing RPL9 Expression and Blocking NF-κB Signaling.Journal of Cardiovascular Translational Research.2023: 1-15.
Li X, et al. Ceftriaxone, an FDA-approved cephalosporin antibiotic, suppresses lung cancer growth by targeting Aurora B. Carcinogenesis. 2012 Dec;33(12):2548-57.
Hakimizadeh E, et al. Ceftriaxone improves hepatorenal damages in mice subjected to D-galactose-induced aging. Life Sci. 2020 Oct 1;258:118119.