Data Sheet (Cat.No.T60874)

TargetMol

Avibactam sodium dihydrate

Chemical Properties

CAS No. :

Formula: C7H14N3NaO8S

Molecular Weight: 323.26

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	Avibactam sodium (NXL-104) dihydrate inhibits CTX-M-15 and β-lactamase TEM-1 with IC50 values of 5 nM and 8 nM, respectively, and is a reversible covalent inhibitor of non-β-lactam β-lactamase [1].
Targets(IC50)	Others,Antibacterial,Antibiotic
In vitro	Avibactam, a molecule with minimal antibacterial activity, selectively inhibits class A and C β-lactamases, excluding metallo types and Acinetobacter OXA carbapenemases [2]. When combined with ceftazidime (0-256 mg/L), this compound effectively halts the growth of 16 bla KPC-2 positive and 1 bla OXA-232 positive Klebsiella pneumonia strains, exhibiting minimum inhibitory concentrations (MIC) of 50 and 90 for both at 8 mg/L [4].
In vivo	Ceftazidime-Avibactam, administered at a dosage of 0.375 mg/g subcutaneously every 8 hours for 10 days, exhibited significant therapeutic efficacy against K. pneumoniae strain Y8 infections in a mouse model, as evidenced by enhanced survival and reduced bacterial counts in the spleen and liver. Additionally, a single dose of Avibactam (64 mg/kg; s.c.) demonstrated a mean estimated half-life of 0.24 hours in the plasma of neutropenic mice with Pseudomonas aeruginosa lung infections. In a specific study, six-week-old female BALB/c mice infected with K. pneumoniae strain Y8 were treated with this combination. Results showed a 70% mortality rate in the infected group within four days, while all mice in the PBS control group died within 13 days. Conversely, mice treated with Ceftazidime-Avibactam survived the entire 10-day treatment period, with a 100% mortality rate observed within four days post-treatment cessation. This highlights the compound's ability to significantly reduce bacterial load, offering a potentially effective treatment option for these infections.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0935 mL	15.4674 mL	30.9349 mL
5 mM	0.6187 mL	3.0935 mL	6.187 mL
10 mM	0.3093 mL	1.5467 mL	3.0935 mL
50 mM	0.0619 mL	0.3093 mL	0.6187 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.