Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Avibactam (free acid)

Catalog No: tcsc0593

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Specifications

CAS No:
1192500-31-4

Formula:
$C_7H_{11}N_3O_6S$

Pathway:
Anti-infection

Target:
Bacterial

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
NXL-104 (free acid)

Observed Molecular Weight:
265.24

Product Description

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Avibactam (NXL-104) free acid is a covalent, reversible **β-lactamase** inhibitor, inhibits β-lactamase **TEM-1** and **CTX-M-15** with **IC_{50}** of 8 nM and 5 nM, respectively.

IC50 & Target: IC50: 8 nM (TEM-1), 5 nM (CTX-M-15)[1]

In Vitro: Avibactam (NXL104) is a molecule with little antibacterial activity, that inhibits class A and C β-lactamases. Avibactam (NXL104) inactivates most important β-lactamases except metallo types and *Acinetobacter* OXA carbapenemases[2].

In Vivo: Avibactam (NXL104) sodium displays a slow return of activity with an off-rate of 0.045±0.022 min^{-1}, which converts to a residence time half-life ($t_{t1/2}$) of 16±8 min. The measured off-rate for Avibactam (NXL104) suggests that slow deacylation through hydrolysis or reversibility is occurring, and it is in contrast to previously reported extremely long $t_{1/2}$ values of >1 or >7 d for Avibactam (NXL104) inhibition of TEM-1[1]. Avibactam is a new promising β-lactamase inhibitor, to overcome resistance caused by β-lactamases. Mice are infected with ca.10^6 CFU of *Pseudomonas aeruginosa* intramuscularly into the thigh or intranasally to cause pneumonia and are given 8 different (single) subcutaneous doses of Ceftazidime and Avibactam (NXL104) in various combined concentrations, ranging from 1 to 128 mg/kg of body weight in 2-fold increases. The mean estimated half-life in plasma of Ceftazidime in the terminal phase is 0.28 h (SD, 0.02 h), and that of Avibactam is 0.24 h (SD, 0.04 h). Volumes of distribution are 0.80 liters/kg (SD, 0.14 liters/kg) and 1.18 liters/kg (SD, 0.34 liters/kg), respectively[3].