

# 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

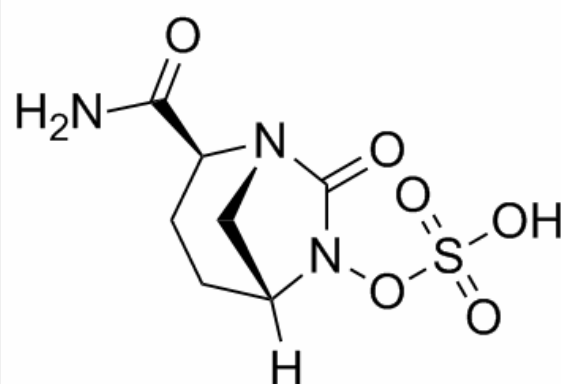
## Product Description

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

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

**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<sup>[2]</sup>.

**In Vivo:** Avibactam (NXL104) sodium displays a slow return of activity with an off-rate of  $0.045 \pm 0.022 \text{ min}^{-1}$ , which converts to a residence time half-life ( $t_{1/2}$ ) of  $16 \pm 8 \text{ min}$ . 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<sup>[1]</sup>. Avibactam is a new promising β-lactamase inhibitor, to overcome resistance caused by β-lactamases. Mice are infected with  $\text{ca.}10^6 \text{ CFU}$  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<sup>[3]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!