Revision 1

Store at -20C

Tigecycline

#88058

10 mg

Cell Signaling TECHNOLOGY®

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Background

Tigecycline, also known as GAR-936, is a broad spectrum glycylcycline antimicrobial that binds to the bacterial 30S ribosome, blocking the entry of transfer RNA. This prevents protein synthesis and limits bacterial growth. Tigecycline has a 9-*t*-butyl-glycylamido side chain on the central skeleton, giving it the ability to overcome most tetracycline resistance mechanisms (1). *In vitro* studies have shown that Tigecycline has activity against multidrug-resistant Gram-negative and -positive bacteria, vancomycin-resistant enterococci (VRE), methicillin-resistant *Staphylococcus aureus* (MRSA) and *Staphylococcus epidermidis* (MRSE), and penicillin-resistant *Streptococcus* (1,2). Studies have also found that Tigecycline can selectively kill human leukemia stem and progenitor cells with no disruption to normal hematopoietic cells (3). This small compound has been shown to induce apoptosis and inhibit cell proliferation in cervical cancers by suppressing the Wnt/β-catenin signaling pathway (4).

Molecular Formula

$C_{29}H_{39}N_5O_8$

Molecular Weight

585.7 g/mol

Purity

>98%

CAS

220620-09-7

Solubility

Soluble in DMSO at 25 mg/ml.

Storage

Store lyophilized at -20ºC, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20ºC and use within 1 month to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use

Tigecycline is supplied as a lyophilized powder. For a 15 mM stock, reconstitute 10 mg of powder in 1.13 ml of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Pankey, G.A. (2005) *J Antimicrob Chemother* 56, 470-80.
2. Greer, N.D. (2006) *Proc (Bayl Univ Med Cent)* 19, 155-61.
3. Skrtić, M. et al. (2011) *Cancer Cell* 20, 674-88.
4. Li, H. et al. (2015) *Biochem Biophys Res Commun* 467, 14-20.

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