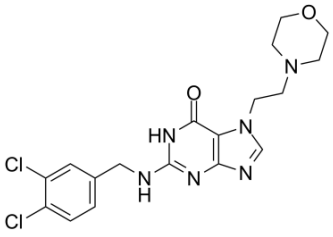
Ibezapolstat

Cat. No.:	HY-128357
CAS No.:	1275582-97-2
Molecular Formula:	$C_{18}H_{20}Cl_2N_6O_2$
Molecular Weight:	423.3
Target:	Bacterial; DNA/RNA Synthesis
Pathway:	Anti-infection; Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Ibezapolstat (ACX-362E) is a first-in-class, orally active DNA polymerase IIIC (pol IIIC) inhibitor, with a K_i of 0.325 μM for the DNA pol IIIC from C. difficile. Ibezapolstat is developed for the research of C. difficile infection(CDI)[1][2].
IC_{50} & Target	Ki: 0.325 μM (DNA pol IIIC from C. difficile)[2]
In Vitro	Ibezapolstat binds to and inhibits DNA pol IIIC from aerobic and low G+C Gram-positive bacteria[1]. Ibezapolstat displays antibacterial activities against broad spectrum of C. difficile pathogens, with an MIC range of 1-8 μg/mL for a panel of 104 clinical isolates of C. difficile overall in vitro[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ibezapolstat is poorly absorbed and apparently nontoxic in the hamster C. difficile-associated disease (CDAD) model (potential for achieving a high local concentration at the site of C. difficile infection in the colon)[3]. Ibezapolstat (50 mg/kg; p.o.; twice daily, for 3 days) shows strong anti-C. difficile properties in the hamster CDAD model[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female golden Syrian hamsters (80-90-g), CDAD model[3]
Dosage:	50 mg/kg
Administration:	Oral administration, twice daily, for 3 days
Result:	Completely protected C. difficile-infected animals for a period of up to 5 days.

REFERENCES

[1]. Beverly Murray, et al. In vitro activity of the novel antibacterial agent ibezapolstat (ACX-362E) against Clostridioides difficile. J Antimicrob Chemother. 2020 Aug 1;75(8):2149-2155.

[2]. Andrea Torti, et al. Clostridium difficile DNA polymerase IIIC: basis for activity of antibacterial compounds. Curr Enzym Inhib. 2011 Oct; 7(3): 147–153.

[3]. Sofya Dvoskin, et al. A Novel Agent Effective against Clostridium difficile Infection. Antimicrob Agents Chemother. 2012 Mar; 56(3): 1624–1626.

Caution: Product has not been fully validated for medical applications. For research use only.

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