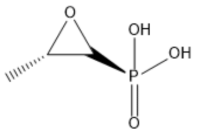
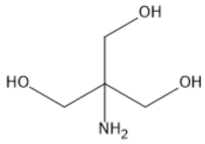
Fosfomycin tromethamine





Cat. No.:	HY-B0609
CAS No.:	78964-85-9
Molecular Formula:	$C_7H_{18}NO_7P$
Molecular Weight:	259.19
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Fosfomycin (MK-0955) tromethamine is a blood-brain barrier penetrating, broad-spectrum antibiotic by irreversibly inhibiting an early stage in cell wall synthesis. Fosfomycin tromethamine shows both in vivo and in vitro activity against a wide range of bacteria, including multidrug-resistant (MDR), extensively drug-resistant (XDR), and pan-drug-resistant (PDR) bacteria[1][2].

In Vitro

Fosfomycin tromethamine is an epoxy antibacterial agent. Compared with other antibacterial agents, it acts by inhibiting the early process of cell wall synthesis[1].

Fosfomycin tromethamine has bactericidal activity against a variety of gram-negative and gram-positive pathogens, including broad-spectrum production β-Bacteria of lactamase and carbapenemase, and against S. aureus strains with an inhibition rate of 90%[1].

Fosfomycin tromethamine displays extensive tissue penetration, can be used to research of infections of the CNS, soft tissues, bone, lungs, and abscesses[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Fosfomycin tromethamine (80 mg/kg; i.v.-i.v. or i.v.-p.o.) displays the protective effect on the nephrotoxicity of double beckacin, and is not affected by different administration routes in rats[3].

Pharmacokinetic of Fosfomycin Tromethamine in Rats[4]

Dibekacin Dose (mg)	V_{dss} (l/kg)	β (min^{-1})	$T_{1/2}$ (min)	Urinary recovery (%)
30	0.261	0.0244	28.4	85

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Animal Model:	Fischer 344 rats[3]
Dosage:	320 mg/kg
Administration:	Intramuscular injection, 5 schedules: 1 h, 0.5 h earlier than dibekacin, concomitantly, 0.5 h later and 1 h later; 11 days
Result:	Reduced polyuria, proteinuria, enzymes and cytosine caused by dibecacin (40 mg/kg),

	followed by the previous treatment.
Animal Model:	Dehydrated Wistar rat with acute renal failure (8-week-old)[4]
Dosage:	120 mg/kg
Administration:	Intravenous injection; once
Result:	Recovered the exclusion rate of rats basically to normal, and improved the nephrotoxicity parameters. Protects proximal tubular lysosomes from aminoglycosides by inhibiting myeloid formation and protecting the integrity of lysosomal membrane of rats treated with double bekacin.

CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 2;13(1):1116.
- Front Cell Infect Microbiol. 2019 Jul 15;9:253.
- Antibiotics (Basel). 2021 Sep 14;10(9):1110.
- J Med Microbiol. 2019 Mar;68(3):493-502.

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REFERENCES

[1]. Falagas ME, et al. Fosfomycin. Clin Microbiol Rev. 2016 Apr. 29(2):321-47.

[2]. Inouye S, et al. Protective effect of fosfomycin on the experimental nephrotoxicity induced by dibekacin. J Pharmacobiodyn. 1982 Sep. 5(9):659-69.

[3]. Inouye S, et al. Mode of protective action of fosfomycin against dibekacin-induced nephrotoxicity in the dehydrated rats. J Pharmacobiodyn. 1982 Dec. 5(12):941-50.

[4]. Dijkmans AC, et al. Fosfomycin: Pharmacological, Clinical and Future Perspectives. Antibiotics (Basel). 2017 Oct 31;6(4). pii: E24.

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