# Cephalexin hydrochloride monohydrate

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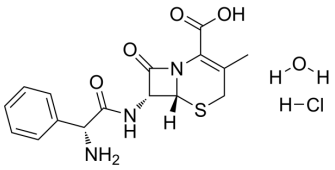
| **Cat. No.:** | HY-B0200C |
| **CAS No.:** | 105879-42-3 |
| **Molecular Formula:** | $C_{16}H_{20}ClN_3O_5S$ |
| **Molecular Weight:** | 401.87 |
| **Target:** | Antibiotic; Bacterial; Penicillin-binding protein (PBP) |
| **Pathway:** | Anti-infection |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

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| **Description** | Cephalexin (Cefalexin) hydrochloride monohydrate is a potent, orally active new semisynthetic cephalosporin antibiotic with a broad antibacterial spectrum. Cephalexin (Cefalexin) hydrochloride monohydrate has antibacterial activity against a wide variety of gram-positive and gram-negative bacteria. Cephalexin (Cefalexin) hydrochloride monohydrate targets penicillin-binding proteins (PBPs) to inhibit bacterial cell wall assembly. Cephalexin (Cefalexin) hydrochloride monohydrate is used for the research of pneumonia, strep throat, and bacterial endocarditis, et al[1][2]. |
| **$IC_{50}$ & Target** | β-lactam |
| **In Vitro** | Cephalexin (Cefalexin) hydrochloride monohydrate (10 μg/mL) disrupts polymer peptidoglycan (PG) biogenesis by inactivating enzymes called penicillin-binding proteins (PBPs)[1].<br>Cephalexin (Cefalexin) hydrochloride monohydrate inhibits a broad spectrum of grampositive and gram-negative organisms with MIC values of 2, 2, 2, 2, 4, 4.4 and 5.7 μg/mL for Bacillus anthracis, Edwardsiella taFda, Vibrio cholera, Pasteurella multocida, Edwardsiella tarda, Alcaligenes sp and Proteus rettgeri, respectively[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Cephalexin (Cefalexin) hydrochloride monohydrate (0-50 mg/kg; p.o.; for 3.5 hours) has antibacterial activity in male Swiss-Webster mice with infected bacterial[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

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| Animal Model: | Male Swiss-Webster mice with infected bacterial[2] |
| Dosage: | 0-50 mg/kg |
| Administration: | Oral administration; for 3.5 hours |
| Result: | Had antibacterial activity against Streptococcus pyogenes, Streptococcus pneumoniae, Staphylococcus aureus and several gram-negative species mice. |

## CUSTOMER VALIDATION

- Theranostics. 2022 Jan 1;12(3):1187-1203.

- Chemosphere. 2021, 131417.
- Chemosphere. 2019 Jun;225:378-387.
- J Med Chem. 2021 Sep 21.
- Infect Immun. 2018 May 22;86(6). pii: e00090-18.

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## REFERENCES

[1]. Cho H, et, al. Beta-lactam antibiotics induce a lethal malfunctioning of the bacterial cell wall synthesis machinery. Cell. 2014 Dec 4;159(6):1300-11.

[2]. Buck RE, et, al. Cefadroxil, a new broad-spectrum cephalosporin. Antimicrob Agents Chemother. 1977 Feb;11(2):324-30.



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