# Eflornithine hydrochloride hydrate

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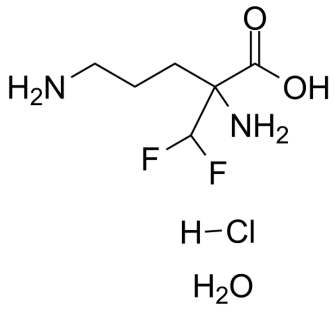
| **Cat. No.:** | HY-B0744B |
| **CAS No.:** | 96020-91-6 |
| **Molecular Formula:** | $C_6H_{15}ClF_2N_2O_3$ |
| **Molecular Weight:** | 236.64 |
| **Target:** | Parasite |
| **Pathway:** | Anti-infection |
| **Storage:** | 4°C, sealed storage, away from moisture<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |




## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : 83.33 mg/mL (352.14 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 4.2258 mL | 21.1291 mL | 42.2583 mL |
| 5 mM | 0.8452 mL | 4.2258 mL | 8.4517 mL |
| 10 mM | 0.4226 mL | 2.1129 mL | 4.2258 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (422.58 mM); Clear solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

**Description**

Eflornithine hydrochloride hydrate (DFMO hydrochloride hydrate) is a specific, irreversible inhibitor of the enzyme ornithine decarboxylase. Eflornithine hydrochloride hydrate is a medication for the treatment of African trypanosomiasis and excessive facial hair growth in women[1].

**In Vivo**

Eflornithine is the only new molecule registered for the treatment of human African trypanosomiasis over the last 50 years. It is the drug used mainly as a back-up for melarsoprol refractory Trypanosoma brucei gambiense cases[1]. In subjects with excessive, unwanted facial hair, eflornithine 15% cream is superior to placebo in reducing hair growth. After 24 weeks' treatment, 58% of eflornithine and 34% of placebo subjects have at least some improvement in facial hirsutism[2]. The hair growth inhibitory activity of eflornithine is significantly enhanced when the eflornithine cream is applied onto a mouse skin area pretreated with microneedles[3]. Treatment of coarctation hypertensive rats with eflornithine results in a normalization of the contractile intensity to KCl and norepinephrine and relaxations to acetylcholine by 14 days of hypertension[4].

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

## PROTOCOL

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| **Animal Administration** [3] | Mice: The skin area where the hair is removed is then treated with the eflornithine hydrochloride 13.9% cream (-50 mg per mouse per treatment) using a spatula 2 times a day in an interval of at least 8 h for a maximum period of 36 days[3].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Nat Commun. 2024 Mar 19;15(1):2461.
- Sci Adv. 2023 May 19;9(20):eade0718.
- JACC Basic Transl Sci. 2022 Aug 3;7(8):820-840.
- Commun Biol. 2019 May 8;2:171.
- Cancer Nanotechnol. 2023 May 9.

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## REFERENCES


[1]. Burri C, et al. Eflornithine for the treatment of human African trypanosomiasis. Parasitol Res. 2003 Jun;90 Supp 1:S49-52.

[2]. Balfour JA, et al. Topical eflornithine. Am J Clin Dermatol. 2001;2(3):197-201; discussion 202.

[3]. Kumar A, et al. A method to improve the efficacy of topical eflornithine hydrochloride cream. Drug Deliv. 2016 Jun;23(5):1495-501.

[4]. Lipke DW, et al. Eflornithine alters changes in vascular responsiveness associated with coarctation hypertension. Clin Exp Hypertens. 1997 Apr;19(3):297-312.





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