

Product Datasheet

Cl-amidine hydrochloride

Catalog No. **BP-02180A** · CAS **1373232-26-8** · Form **salt** · **hydrochloride** · Physical state **solid** · Color **White to light yellow** · Version **1.0** · Revision **2026-09-04**

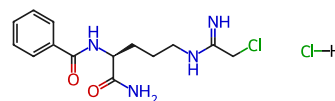
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Target Protein Arginine Deiminase; Apoptosis; MicroRNA	Research area Inflammation/Immunology; Cancer
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Molecular formula **C₁₄H₂₀Cl₂N₄O₂**

Molecular weight **347.2400**

STRUCTURE



DESCRIPTION

Cl-amidine hydrochloride is an orally active peptidylarginine deiminase (PAD) inhibitor, with IC₅₀ values of 0.8 μM, 6.2 μM and 5.9 μM for PAD1, PAD3, and PAD4, respectively. Cl-amidine hydrochloride induces apoptosis in cancer cells. Cl-amidine hydrochloride induces microRNA (miR)-16 (miRNA-16, microRNA-16) expression and causes cell cycle arrest. Cl-Amidine hydrochloride prevents histone 3 citrullination and neutrophil extracellular trap formation, and improves survival in a murine sepsis model[1][2][3][4][5].

BIOLOGICAL ACTIVITY

In Vitro

Cl-amidine is a bioavailable haloacetamide-based compound that inhibits all the active PAD isozymes with near equal potency (kinact/KI=13,000 M⁻¹ min⁻¹ for PAD4).

Cl-amidine (0, 5, 10, 15, 20, 25, 50 μg/mL, 24 hours) induces apoptosis in TK6 lymphoblastoid cells and HT29 colon cancer cells in a dose-dependent manner. Interestingly, the colon cancer cell line (HT29) is relatively resistant to apoptosis caused by Cl-amidine.

Cl-Amidine prevents histone 3 citrullination and neutrophil extracellular trap formation, and improves survival in a murine sepsis model.

In Vivo

Cl-amidine (75 mg/kg, ip once daily) suppresses and treats DSS-induced colitis in mice.

Cl-amidine (5, 25, 75 mg/kg, oral gavage, once daily) leads to significant reductions in the histology scores dose-dependently.

SOLUBILITY

soluble in DMSO

REFERENCES

- [1]. Yuan Luo, et al. Inhibitors and Inactivators of Protein Arginine Deiminase 4: Functional and Structural Characterization. *Biochemistry*. 2006 Oct 3; 45(39): 11727-11736.
- [2]. Chumanevich AA, et al. Suppression of colitis in mice by Cl-amidine: a novel peptidylarginine deiminase inhibitor. *Am J Physiol Gastrointest Liver Physiol*. 2011 Jun;300(6):G929-38.
- [3]. Witalison EE, et al. Molecular targeting of protein arginine deiminases to suppress colitis and prevent colon cancer. *Oncotarget*. 2015 Nov 3;6(34):36053-62.
- [4]. Biron BM, et al., Cl-Amidine Prevents Histone 3 Citrullination and Neutrophil Extracellular Trap Formation, and Improves Survival in a Murine Sepsis Model. *J Innate Immun*. 2017;9(1):22-32.
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Lot CoA and SDS are separate documents.