

PRODUCT INFORMATION

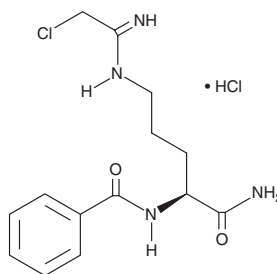


Cl-Amidine (hydrochloride)

Item No. 10599

Sold under license from the University of South Carolina under U.S. Patent No. 7,964,636.

CAS Registry No.: 1373232-26-8
Formal Name: N-[(1S)-1-(aminocarbonyl)-4-[(2-chloro-1-iminoethyl)amino]butyl]-benzamide, monohydrochloride
MF: C₁₄H₁₉ClN₄O₂ • HCl
FW: 347.2
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cl-Amidine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the Cl-amidine (hydrochloride) in the solvent of choice. Cl-Amidine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of Cl-amidine (hydrochloride) in these solvents is approximately 20, 50, and 14 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of Cl-amidine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of Cl-amidine (hydrochloride) in PBS, pH 7.2, is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cl-amidine is an inhibitor of protein arginine deiminases (PAD; IC₅₀s = 0.8, 6.2, and 5.9 μM for PAD1, PAD3, and PAD4 *in vitro*, respectively).^{1,2} It irreversibly inactivates all four PAD subtypes (k_{inact}/K_i = 37,000, 1,200, 2,000, and 13,000 M⁻¹min⁻¹ for PAD1-4, respectively) by covalently modifying an active site cysteine that is important for its catalytic activity.^{1,3} Cl-amidine is cytotoxic to HL-60, MCF7, and HT-29 cancer cell lines (IC₅₀s = 0.25, 0.05 and 1 μM, respectively).⁴ In a collagen-induced mouse model of inflammatory arthritis, Cl-amidine dose-dependently decreases the citrulline content in serum and joints and reduces the development of IgG autoantibodies.⁵

References

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2. Knuckley, B., Causey, C.P., Jones, J.E., *et al.* *Biochem.* **49(23)**, 1-28 (2010).
3. Muth, A., Subramanian, V., Beaumont, E., *et al.* *J. Med. Chem.* **60(7)**, 3198-3211 (2017).
4. Slack, J.L., Causey, C.P., and Thompson, P.R. *Cell. Mol. Life Sci.* **68(4)**, 709-720 (2011).
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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM