Cimetidine hydrochloride

Cat. No.: HY-14289A

CAS No.: 70059-30-2

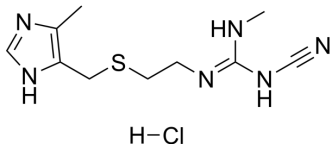
Molecular Formula: $C_{10}H_{17}ClN_6S$

Molecular Weight: 288.8

Target: Histamine Receptor; Bacterial

Pathway: GPCR/G Protein; Immunology/Inflammation; Neuronal Signaling; Anti-infection

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Cimetidine (SKF-92334) hydrochloride is an orally active and inverse histamine H2 receptor antagonist with a K_i of 0.6 μM. Cimetidine hydrochloride is a gastric acid reducer, and can be used for duodenal and gastric ulcers research. Cimetidine hydrochloride has anti-cancer and anti-inflammatory activity[1][2][5].
IC_{50} & Target	H_2 Receptor .6 μM (Kd)
In Vitro	Cimetidine (SKF-92334) hydrochloride, a partial agonist for H2R, has a pharmacological profile different from ranitidine and famotidine, possibly contributing to its antitumor activity on gastrointestinal cancers [1]. Cimetidine hydrochloride has no effect on the uptake and cytotoxicity of cisplatin in ovarian cancer cells with high OCT2 mRNA levels (IGROV-1 cells)[3]. Cimetidine hydrochloride shows no effect on proliferation, survival, migration and invasion of 3LL cells. Cimetidine hydrochloride reverses MDSC-mediated T-cell suppression, and improves IFN-γ production[4]. Cimetidine-mediated down-regulation of NCAM involved suppression of the nuclear translocation of NF-kappaB, a transcriptional activator of NCAM gene expression[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cimetidine (SKF-92334) hydrochloride reduces CD11b(+)Gr-1(+) myeloid derived-suppressive cell (MDSC) accumulation in spleen, blood and tumor tissue of tumor-bearing mice[4]. Cimetidine hydrochloride exerts a beneficial effect on periodontal disease in rats, decreasing the RANKL/OPG ratio in gingival connective tissue and reducing alveolar bone resorption[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.
- Ann Transl Med. 2020 Oct;8(20):1304.

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REFERENCES

[1]. M J Smit, et al. Inverse agonism of histamine H2 antagonist accounts for upregulation of spontaneously active histamine H2 receptors. Proc Natl Acad Sci U S A. 1996 Jun 25;93(13):6802-7.

[2]. Takahashi, H.K., et al., Cimetidine induces interleukin-18 production through H2-agonist activity in monocytes. Mol Pharmacol, 2006. 70(2): p. 450-3.

[3]. Sprowl, J.A., et al., Conjunctive therapy of cisplatin with the OCT2 inhibitor cimetidine: influence on antitumor efficacy and systemic clearance. Clin Pharmacol Ther, 2013. 94(5): p. 585-92.

[4]. Zheng, Y., et al., Cimetidine suppresses lung tumor growth in mice through proapoptosis of myeloid-derived suppressor cells. Mol Immunol, 2013. 54(1): p. 74-83.

[5]. Fukuda, M., K. Kusama, and H. Sakashita, Cimetidine inhibits salivary gland tumor cell adhesion to neural cells and induces apoptosis by blocking NCAM expression. BMC Cancer, 2008. 8: p. 376.

[6]. Longhini, R., et al., Cimetidine Reduces the Alveolar Bone Loss in Induced Periodontitis in Rat Molars. J Periodontol, 2013.

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