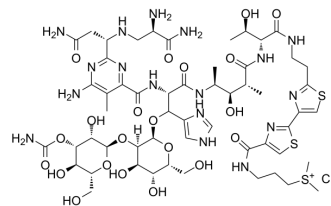


Bleomycin hydrochloride

Cat. No.:	HY-17565A
CAS No.:	67763-87-5
Molecular Formula:	C ₅₅ H ₈₄ ClN ₁₇ O ₂₁ S ₃
Molecular Weight:	1451
Target:	DNA/RNA Synthesis; Antibiotic
Pathway:	Cell Cycle/DNA Damage; Anti-infection
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (68.92 mM; Need ultrasonic)
DMSO : 50 mg/mL (34.46 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.6892 mL	3.4459 mL	6.8918 mL
	5 mM	0.1378 mL	0.6892 mL	1.3784 mL
	10 mM	0.0689 mL	0.3446 mL	0.6892 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (1.72 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (1.72 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (1.72 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bleomycin hydrochloride is a DNA synthesis inhibitor. Bleomycin hydrochloride is a DNA damaging agent. Bleomycin hydrochloride is an antitumor antibiotic^[1].

In Vitro

Bleomycin hydrochloride is chosen as the best-studied micronucleus inducers in human lymphocytes with different mechanisms of genotoxicity. The most frequent Bleomycin-induced DNA lesions are single and double strand breaks and single apuinic/apurimidine sites. At the same time Bleomycin is true radiomimetic compound, resembling almost completely the genetic effect of ionizing radiation^[1].

The IC₅₀ value of Bleomycin hydrochloride for UT-SCC-19A cell line is 4.0±1.3 nM. UT-SCC-12A and UT-SCC-12B are both more resistant to Bleomycin; IC₅₀ values are 14.2±2.8 nM and 13.0±1.1 nM, respectively^[2]. Bleomycin hydrochloride (50, 100 μM; for 24, 48 h) induce pulmonary fibrosis in RLE-6TN cell (50 μM) and A549 cell (100 μM) [4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Bleomycin hydrochloride treatment (3.5-4.0 mg/kg; intra-tracheal) on day 0, body weights decreases by day 4 then increases by Day 7 through the end of the study^[3]. Bleomycin hydrochloride (3.5-4.0 mg/kg; intra-tracheal) produces a statistically significant increase in lung hydroxyproline levels, and also increases right caudal lung lobe mass^[3]. Bleomycin hydrochloride (intratracheal instillation; 5.0 mg/kg/day) induces pulmonary fibrosis in eighty 8-week-old male BALB/c mice with weight about 20-30 g. Bleomycin induces the expression levels of α-SMA and collagen I^[4]. Bleomycin hydrochloride (intratracheally; 2.5 mg/kg; 1.25 mg/ml, approximately 50 μl per mouse) induces pulmonary fibrosis in male C57BL/6 mice (8 weeks old, average weight approximately 24.5 g)^[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Fischer 344 rats, 8-10 week old, weighing 150-250 g ^[3]
Dosage:	3.5-4 mg/kg
Administration:	Intra-tracheal
Result:	Body weights decreased by day 4 then increased by Day 7 through the end of the study.

CUSTOMER VALIDATION

- Nat Metab. 2021 Dec 6.
- Small. 2021 Oct 8;e2103919.
- Redox Biol. 2021 Jul 26;46:102082.
- J Cell Biol. 2021 Feb 1;220(2):e201911025.
- ACS Appl Mater Interfaces. 2019 Jan 16;11(2):1942-1950.

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- [1]. Hovhannisyán G, et al. Comparative analysis of individual chromosome involvement in micronuclei induced by bleomycin in human leukocytes. Mol Cytogenet. 2016 Jun 21;9:49.
- [2]. Jaaskela-Saari HA, et al. Squamous cell cancer cell lines: sensitivity to bleomycin and suitability for animal xenograft studies. Acta Otolaryngol Suppl. 1997;529:241-4.
- [3]. Corboz MR, et al. Therapeutic administration of inhaled INS1009, a LRX-15 prodrug formulation, inhibits bleomycin-induced pulmonary fibrosis in rats. Pulm Pharmacol Ther. 2018 Apr;49:95-103.
- [4]. Ling Peng, et al. Scutellarin ameliorates pulmonary fibrosis through inhibiting NF-κB/NLRP3-mediated epithelial-mesenchymal transition and inflammation. Cell Death Dis. 2020 Nov 13;11(11):978.
- [5]. Kang Miao, et al. Scutellarein inhibits BLM-mediated pulmonary fibrosis by affecting fibroblast differentiation, proliferation, and apoptosis. Ther Adv Chronic Dis. 2020 Jul 30;11:2040622320940185.
- [6]. Kang Miao, et al. Scutellarein inhibits BLM-mediated pulmonary fibrosis by affecting fibroblast differentiation, proliferation, and apoptosis. Ther Adv Chronic Dis. 2020 Jul 30;11:2040622320940185.

[7]. Ling Peng, et al. Scutellarin ameliorates pulmonary fibrosis through inhibiting NF- κ B/NLRP3-mediated epithelial-mesenchymal transition and inflammation. Cell Death Dis. 2020 Nov 13;11(11):978.

Caution: Product has not been fully validated for medical applications. For research use only.

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