Web: www.taiclone.com
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Bleomycin (sulfate)

Catalog No: tcsc3071

Available Sizes

Size: 10mg

Size: 50mg

Specifications

CAS No:
9041-93-4

Formula:
$C_{55}H_{85}N_{17}O_{25}S_4$

Pathway:
Anti-infection;Cell Cycle/DNA Damage

Target:
Bacterial;DNA/RNA Synthesis

Purity / Grade:
>98%

Solubility:
H2O : 255 mg/mL (168.58 mM; Need ultrasonic and warming); DMSO : 16.67 mg/mL (11.02 mM; Need ultrasonic)

Observed Molecular Weight:
1512.62

Product Description

Bleomycin sulfate is a potent **DNA damaging** agent, as the best-studied **micronucleus** (MN) inducer. Bleomycin also is a natural antibiotic, toxic to dividing cells (G_2/M-phase), also proven effective in squamous cell carcinomas (SCC).

IC50 & Target: DNA/RNA Synthesis[1]

In Vitro: Bleomycin (BLM) is chosen as the best-studied micronucleus (MN) inducers in human lymphocytes with different

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mechanisms of genotoxicity. The most frequent Bleomycin-induced DNA lesions are single and double strand breaks and single apuinic/apyrimidinic sites. At the same time Bleomycin is true radiomimetic compound, resembling almost completely the genetic effect of ionizing radiation[1]. The IC_{50} value of Bleomycin sulfate 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 (BLM); IC_{50} values are 14.2±2.8 nM and 13.0±1.1 nM, respectively[2]. Bleomycin (BLM) induces a significant increase in the percentage of aberrant cells (i.e., cells showing at least one aberration) and in the frequency of chromosomal aberrations per cell compare with control cultures 18 h after treatment (p[3].

In Vivo: A short-range beta-emitting radionuclide combined to Bleomycin (In-111-BLMC) is a tumor-targeting agent in SCCs. Within 35 days the weight of nude mice increases 2.8±0.6g. At 25 and 35 days after tumor inoculations the tumor volumes are 111±51 mm^3 and 874±577 mm^3, respectively. The calculated doubling time is 3.86±0.76 days. SCC cell lines demonstrate different sensitivity to Bleomycin. Our SCC tumor xenograft model shows a rapid growth proper for radiochemotherapeutic studies using In-111-BLMC. The uptake of In-111-BLMC in vivo has been directly proportional to proliferation activity, and the tumors with high binding capacity could be predicted from animal model dose calculations[2]. At 7 and 14 days after Bleomycin (BLM) treatment, the signal of TGF-β1 is significantly stronger than that of the control group. At 28 days after treatment, the TGF-β1 signal became a little weaker. At 7 and 14 days of Bleomycin plus Dex group, the signal of TGF-β1 is also stronger than that of the control group. However, at 28 days, the TGF-β1 signal become weaker and is a little stronger than the level of control group. All the results are given by comparison of the average IOD value[4].