
Product Data Sheet

Product Name: Cytochalasin B (Phomin)

Cat. No.: GC32890

Chemical Properties

Cas. No. 14930-96-2

SMILES O=C1N[C@@H](CC2=CC=CC=C2)[C@@]3([H])[C@]14[C@]([C@@H](C)CCC[C@@H](O)/C=C/C(O4)=O)([H])[C@H](O)C([C@H]3C)=C

Formula C₂₉H₃₇NO₅

M.Wt 479.61

Solubility DMF: 30 mg/ml DMF:PBS (pH 7.2) (1:20): 0.05 mg/ml DMSO: 20 mg/ml Ethanol: 20 mg/ml

Store
Storage at -
20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Cell experiment [1]:**

Cell lines	Human mesenchymal stem cells (hMSCs)
Preparation Method	Cells were cultured in the presence of Cytochalasin B or 0.05% DMSO.
Reaction Conditions	0.1-10 μM; 0-72 h

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

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Applications	Cytochalasin B influenced the metabolism, proliferation, and morphology of hMSCs in a dose-dependent manner.
Animal experiment [2]:	
Animal models	Balb/c mice (bearing P388/ADR leukemias)
Preparation Method	Mice (bearing P388/ADR leukemias) were administered with Cytochalasin B on Days 1-8.
Dosage form	Cytochalasins B was prepared in suspension form in 2% carboxymethyl cellulose 1% tween 20 (CMC/Tw); i.p.;10, 25, or 50 mg/kg; 8days
Applications	Cytochalasin B dose-dependently increases the life expectancy of Balb/c mice bearing with P388/ADR leukemias.

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References:

- [1]. Bianconi E, Tassinari R, et,al. Cytochalasin B Modulates Nanomechanical Patterning and Fate in Human Adipose-Derived Stem Cells. *Cells*. 2022 May 12;11(10):1629. doi: 10.3390/cells11101629. PMID: 35626666; PMCID: PMC9139657.
- [2].Trendowski M, Mitchell JM, et,al. Chemotherapy with cytochalasin congeners in vitro and in vivo against murine models. *Invest New Drugs*. 2015 Apr;33(2):290-9. doi: 10.1007/s10637-014-0203-5. Epub 2015 Jan 7. PMID: 25563824; PMCID: PMC4387261.

Background

Cytochalasin B is a cyto-permeable mycotoxin, and it is isolated from an ascomycete fungus belonging to the *Phoma* genus[1-2]. Cytochalasin B is able to inhibit the formation of actin microfilaments through a direct effect on the polymerization of the cytoskeletal protein. By binding the fast-growing end of F-actin and interacting with capping proteins, influences the nucleation-elongation of actin microfilaments[3-4].

Cytochalasin B (0.1-10 μ M; 0-72 h) influenced the metabolism, proliferation, and morphology of hASCs in a dose-dependent manner, in association with progressive disorganization of actin microfilaments[5]. Cytochalasin B is capable of inducing DNA fragmentation in a number of cells lines[6]. Cytochalasin B (10-8-10-1M; 24-96 h) effectively inhibited U251 cell proliferation in a dose- and time-dependent manner. Cytochalasin B increased the proportion of cells in the G2/M phase in a dose-dependent manner, thus increasing the mitotic index and decreasing CDC2 and cyclin B1 protein levels[7].

Cytochalasin B(Cytochalasins B was prepared in suspension form in 2% carboxymethyl cellulose 1% tween 20 (CMC/Tw); i.p.;10, 25, or 50 mg/kg; 8days) dose-dependently increases the life expectancy of Balb/c mice bearing with P388/ADR leukemias[8].Cytochalasin B(5 μ g/ml Cytochalasin B; 30 min) treatment of mouse oocytes during intracytoplasmic sperm injection (ICSI) increases embryo survival without

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impairment of development[9].

References:

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- [4]. Flanagan MD, Lin S. Cytochalasins block actin filament elongation by binding to high affinity sites associated with F-actin. *J Biol Chem.* 1980 Feb 10;255(3):835-8. PMID: 7356663.
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- [6]. Kolber MA, Broschat KO, et,al. Cytochalasin B induces cellular DNA fragmentation. *FASEB J.* 1990 Sep;4(12):3021-7. doi: 10.1096/fasebj.4.12.2394319. PMID: 2394319.
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