

Small Molecules

Cytochalasin D

Inhibits actin polymerization



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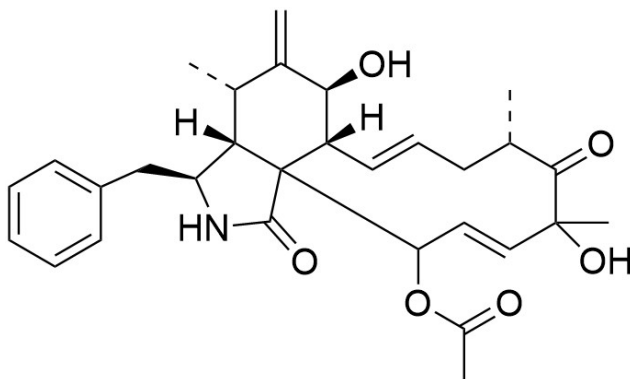
1 mg
5 mg

Product Description

Cytochalasin D is a fungal toxin and a cell-permeable inhibitor of actin polymerization (Brenner & Korn). It also partially blocks HIV-1 release from infected human embryonic stem cells and lymphoma cells (Sasaki et al.).

Molecular Name:	Cytochalasin D
Alternative Names:	NSC 209835
CAS Number:	22144-77-0
Chemical Formula:	C ₃₀ H ₃₇ NO ₆
Molecular Weight:	507.6 g/mol
Purity:	≥ 95%
Chemical Name:	(3S,3aR,4S,6S,6aR,7E,10S,12R,13E,15R,15aR)-15-(acetyloxy)-3,3a,4,5,6,6a,9,10,12,15-decahydro-6,12-dihydroxy-4,10,12-trimethyl-5-methylene-3-(phenylmethyl)-1H-cycloundec[d]isoindole-1,11(2H)-dione

Structure:



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	• Dichloromethane (DCM) ≤ 19 mM For example, to prepare a 10 mM stock solution in DCM, resuspend 1 mg in 197 µL of DCM.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DCM at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DCM concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION

· Reduces cell viability and inhibits osteoblastic cells differentiation in human stromal stem cells (Chen et al.).

CANCER RESEARCH

· Binds actin filament and prevents tumor migration in human breast and lung cancer cells (Hayot et al.).

References

Brenner SL & Korn ED. (1980) The effects of cytochalasins on actin polymerization and actin ATPase provide insights into the mechanism of polymerization. *J Biol Chem* 255(3): 841–4.

Chen L et al. (2015) Inhibiting actin depolymerization enhances osteoblast differentiation and bone formation in human stromal stem cells. *Stem Cell Res* 15(2): 281–9.

Hayot C et al. (2006) Characterization of the activities of actin-affecting drugs on tumor cell migration. *Toxicol Appl Pharmacol* 211(1): 30–40.

Sasaki H et al. (1995) Myosin-actin interaction plays an important role in human immunodeficiency virus type 1 release from host cells. *Proc Natl Acad Sci USA* 92(6): 2026–30.

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