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Diagnostik & molekulare Diagnostik



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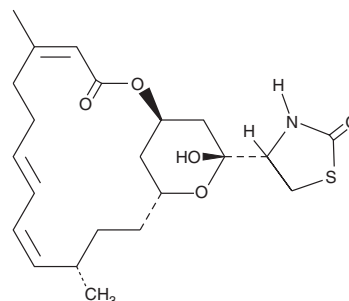
PRODUCT INFORMATION



Latrunculin A

Item No. 10010630

CAS Registry No.: 76343-93-6
Formal Name: (4R)-[(1R,4Z,8E,10Z,12S,15R,17R)-17-hydroxy-5,12-dimethyl-3-oxo-2,16-dioxabicyclo[13.3.1]nonadeca-4,8,10-trien-17-yl]-2-thiazolidinone
Synonym: NSC 613011
MF: C₂₂H₃₁NO₅S
FW: 421.6
Purity: ≥95%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Latrunculin A is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol and DMSO, purged with an inert gas, can be used. The solubility of latrunculin A in these solvents is approximately 25 mg/ml.

Latrunculin A is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Actin disruption is used to study cell functions *in vitro* (e.g., migration and endocytosis) and *in vivo* (e.g., tumor cell invasion). Latrunculin A is a bioactive 2-thiazolidinone macrolide derived from sponges that sequesters G-actin and prevents F-actin assembly. It binds monomeric actin with 1:1 stoichiometry and can be used to block actin polymerization both *in vitro* ($K_d = 0.2 \mu\text{M}$) and in cells ($0.5 \mu\text{M}$, 30 min).¹⁻³ Latrunculin A ($1-10 \mu\text{M}$) causes depolymerization of tumor cell cytoskeleton within ten minutes.⁴ Overnight treatment of cells with latrunculin A ($10 \mu\text{M}$) strongly suppresses actin synthesis.⁵ Prolonged cell treatment blocks dexamethasone-induced changes in actin cytoskeleton with no effect on cell viability.⁶

References

1. Coué, M., Brenner, S.L., Spector, I., *et al.* Inhibition of actin polymerization by latrunculin A. *FEBS* **213**(2), 316-318 (1987).
2. Yarmola, E.G., Somasundaram, T., Boring, T.A., *et al.* Actin-latrunculin A structure and function. *J. Biol. Chem.* **275**(36), 28120-28127 (2000).
3. Loubéry, S., Wilhelm, C., Hurbain, I., *et al.* Different microtubule motors move early and late endocytic compartments. *Traffic* **9**, 492-509 (2008).
4. Hayot, C., Debeir, O., Van Ham, P., *et al.* Characterization of the activities of actin-affecting drugs on tumor cell migration. *Toxicol. Appl. Pharmacol.* **211**, 30-40 (2006).
5. Lyubimova, A., Bershadsky, A.D., and Ben-Ze'ev, A. Autoregulation of actin synthesis requires the 3'-UTR of actin mRNA and protects cells from actin overproduction. *J. Cell. Biochem.* **76**, 1-12 (1999).
6. Liu, X., Wu, Z., Sheibani, N., *et al.* Low dose latrunculin-A inhibits dexamethasone-induced changes in the actin cytoskeleton and alters extracellular matrix protein expression in cultured human trabecular meshwork cells. *Exp. Eye Res.* **77**, 181-188 (2003).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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