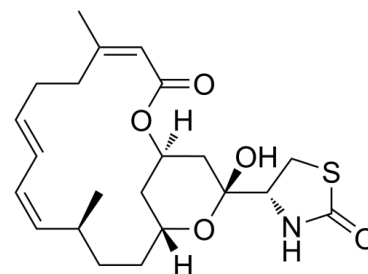


Data Sheet

Product Name:	Latrunculin A
Cat. No.:	CS-0012976
CAS No.:	76343-93-6
Molecular Formula:	C ₂₂ H ₃₁ NO ₅ S
Molecular Weight:	421.55
Target:	Arp2/3 Complex
Pathway:	Cytoskeleton
Solubility:	10 mM in DMSO



BIOLOGICAL ACTIVITY:

Latrunculin A (LAT-A), found in the red sea sponge *Latrunculia magnifica*, is a **G-actin polymerization** inhibitor. Latrunculin A binds to actin monomers and inhibits polymerization of actin with K_d s of 0.1, 0.4, 4.7 μ M and 0.19 μ M for ATP-actin, ADP-Pi-actin, ADP-actin and G-actin, respectively. Latrunculin A has effective anti-metastatic properties for cancer research. Latrunculin A blocks cell migration^{[1][2][3][4][5][6]}. IC₅₀ & Target:Kd: 0.1 μ M (ATP-actin), 0.4 μ M (ADP-Pi-actin), 4.7 μ M (ADP-actin), 0.19 μ M (G-actin)^[2] **In Vitro:**Latrunculin A (50-1000 nM) exhibits potent anti-invasive activity against human prostate cancer PC-3M cells, inhibits PC-3M-CT+ spheroids disaggregation and cell migration^[3].

Latrunculin A (3-30 μ M) inhibits hypoxia-induced HIF-1 activation with an IC₅₀ value of 6.7 μ M in human breast carcinoma T47D cells^[3].

Latrunculin A (0-0.2 μ M, 4 hours) has a significant inhibitory effect on HuR levels at high concentrations such as 0.2 μ M in human hepatoma HepG2 cells while inhibits HuR only at 0.02 μ M but no inhibitory effect at high concentrations in human hepatoma Huh7 cells^[4].

Latrunculin A (0.1 μ M, 24 hours) can lead to a significant decrease in cell migration and has an inhibitory effect on cell proliferation in human hepatoma cell lines HepG2^[4].

In Vivo:Latrunculin A (intraperitoneal injection, 0.05 mg/kg, three doses in the first 20 days, 120 days) has strong antitumor effect in male BALB/c nude mice models infected with adenocarcinoma (MKN45) or carcinoma (NUGC-4)^[5].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration:Dissolved in dimethylsulfoxide (DMSO)

References:

[1]. Fujiwara I, et al. Latrunculin A Accelerates Actin Filament Depolymerization in Addition to Sequestering Actin Monomers. *Curr Biol*. 2018 Oct 8;28(19):3183-3192.e2.

[2]. Coué M, et al. Inhibition of actin polymerization by latrunculin A. *FEBS Lett*. 1987 Mar 23;213(2):316-8.

[3]. Khalid A El Sayed, et al. Latrunculin A and its C-17-O-carbamates inhibit prostate tumor cell invasion and HIF-1 activation in breast tumor cells. *J Nat Prod*. 2008 Mar;71(3):396-402.

[4]. Anke Doller, et al. The cytoskeletal inhibitors latrunculin A and blebbistatin exert antitumorigenic properties in human hepatocellular carcinoma cells by interfering with intracellular HuR trafficking. Exp Cell Res. 2015 Jan 1;330(1):66-80.

[5]. Hiroo Konishi, et al. Latrunculin a has a strong anticancer effect in a peritoneal dissemination model of human gastric cancer in mice. Anticancer Res. 2009 Jun;29(6):2091-7.

[6]. Liang Ma, et al. Discovery of the migrasome, an organelle mediating release of cytoplasmic contents during cell migration. Cell Res. 2015 Jan;25(1):24-38.

CAIndexNames:

2-Thiazolidinone, 4-[(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]-, (4R)-

SMILES:

O=C1SC[C@@H]([C@]2(O)O[C@]3([H])CC[C@H](C)/C=C\C=CC/C(C)=C\C(O[C@@](C3)([H])C2)=O)N1

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

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