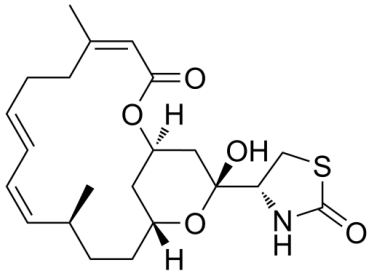
Data Sheet

Product Name:	Latrunculin A
Cat. No.:	CS-0012976
CAS No.:	76343-93-6
Molecular Formula:	$C_{22}H_{31}NO_5S$
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 μM and 0.19 μM 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 μM (ATP-actin), 0.4 μM (ADP-Pi-actin), 4.7 μM (ADP-actin), 0.19 μM (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 μM) inhibits hypoxia-induced HIF-1 activation with an IC_{50} value of 6.7 μM in human breast carcinoma T47D cells [3].

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

Latrunculin A (0.1 μM, 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=C\CC/C(C)=C\C(O[C@@](C3)([H])C2)=O)N1

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