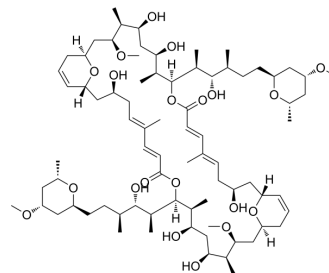


## Swinholide A

Cat. No.:	HY-111009
CAS No.:	95927-67-6
Molecular Formula:	C <sub>78</sub> H <sub>132</sub> O <sub>20</sub>
Molecular Weight:	1389.87
Target:	Fungal
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

#### Description

Swinholide A is the actin-binding marine polyketide and dimerizes actin with the  $K_d$  of ~ 50 nM<sup>[1]</sup>. Swinholide A is a microfilament disrupting marine toxin that stabilizes actin dimers and severs actin filaments. Swinholide A disrupts the actin cytoskeleton of cells. Antifungal activity<sup>[2]</sup>.

#### In Vitro

**Caution: Product has not been fully validated for medical applications. For research use only.**  
 Swinholide A, first isolated from the Okinawan marine sponge *Theonella swinhoei*, dimerizes actin<sup>[1]</sup>.  
 Swinholide A, isolated from the marien sponge *Theonella swinhoei*, is highly cytotoxic to a variety of cancer cell lines<sup>[2]</sup>.  
 Swinholide A disrupts the actin cytoskeleton of cells grown in culture, sequesters actin dimers in vitro in both polymerizing and non-polymerizing buffers with a binding stoichiometry of one swinholide A molecule per actin dimer, and rapidly severs F-actin in vitro with high cooperativity<sup>[2]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.  
 Cell Viability Assay<sup>[2]</sup>

Cell Line:	Balb/c 3T3 and Swiss 3T3 cells
Concentration:	5-100 nM
Incubation Time:	1-24 h
Result:	Exponentially growing cells exposed to 10 nM for 24 h became arborized with diffuse cytoplasmic staining and fluorescent punctate structures. Partial cell retraction or arborization and diminution of microfilament bundles began after 2-4 h, with complete loss of stress fibers by 5-7 h at concentrations of 10-50 nM. Caused rounding of cultured mouse embryo 3T3 fibroblast cells within 1 h at concentration of 80 nM.

### REFERENCES

- [1]. Inji Shin, et al. Total Synthesis of Swinholide A: An Exposition in Hydrogen-Mediated C-C Bond Formation. *J Am Chem Soc.* 2016 Nov 2;138(43):14246-14249.
- [2]. M R Bubb, et al. Swinholide A is a microfilament disrupting marine toxin that stabilizes actin dimers and severs actin filaments. *J Biol Chem.* 1995 Feb 24;270(8):3463-6.