



PRODUCT DATA SHEET

Product: Swinholide A

Cat. No: AP-005 (10 µg)

Formula:

C₇₈H₁₃₂O₂₀

Molecular Weight: 1388.9

Appearance:

Colorless oil.

Production:

Isolated from the marine sponge *Theonella swinhoei* by preparative flash, medium pressure, and high performance liquid chromatography.

Purity:

≥98% (HPLC)

Description:

Swinholide A is a 44-carbon dimeric dilactone ring macrolide isolated from the marine sponge *Theonella swinhoei*. In vitro, it sequesters actin dimers with a binding stoichiometry of 1:1, and it rapidly severs F-actin with high cooperativity. Swinholide A is potently cytotoxic by disruption of the actin cytoskeleton. It does not block progression of cells through the cell cycle, but does prevent cytokinesis.

Cytotoxicity:

Cell Type		IC50 (µg/ml)
KB	Oral, epidermoid cell carcinoma	0.04
HT-1080	Fibrosarcoma	0.017
PC-3	Lung, adenocarcinoma	6.0
PC-9	Lung, adenocarcinoma	0.13
PC-10	Lung, squamous cell carcinoma	0.11
PC-13	Lung, large cell carcinoma	0.10
Daudi	Burkitt lymphoma	0.036

Applications:

Can be used in cell biology to distinguish between the effects induced by increasing intracellular concentrations of G-actin from those induced by a reduction in F-actin.

Storage and Stability:

Stable indefinitely as supplied when stored at -20°C or below.

References:

1. Bubb, M.R. et al. (1995) Swinholide A is a Microfilament Disrupting Marine Toxin that Stabilizes Actin Dimers and Severs Actin Filaments. *J. Biol. Chem.* 270:3463-3466.
2. Lyubimova, A. et al. (1997) Autoregulation of Actin Synthesis Responds to Monomeric Actin Levels. *J. of Cellular Biochem.* 65:469-478.
3. Saito, S. et al. (1998) Actin-Depolymerizing Effect of Dimeric Macrolides, Bistheonellide A and Swinholide A. *J. Biochem.* 123: 571-578.
4. Bubb, MR. and Spector, I. (1998) Use of the F-actin-binding drugs, misakinolide A and swinholide A. *Methods Enzymology* 298:26-32.

Limitations:

For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:

No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.