

Product Name: Thapsigargin

Catalog No.: 1138

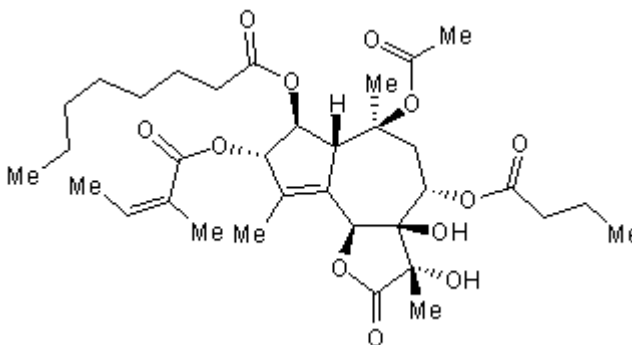
Batch No.: 15

CAS Number: 67526-95-8

IUPAC Name: (3*S*,3*aR*,4*S*,6*S*,6*AR*,7*S*,8*S*,9*bS*)-6- (Acetyloxy)-2,3,3*a*,4,5,6,6*a*,7,8,9*b*-decahydro-3,3*a*-dihydroxy-3,6,9-trimethyl-8-[[*(2Z)*-2-methyl-1-oxo-2-butenyl]oxy]-2-oxo-4-(1-oxobutoxy)azuleno[4,5-*b*]furan-7-yl octanoate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₃₄H₅₀O₁₂
Batch Molecular Weight: 650.76
Physical Appearance: Colourless lyophilised solid
Solubility: DMSO to 100 mM
Storage: Desiccate at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.8% purity
Mass Spectrum: Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Potent inhibitor of sarco-endoplasmic reticulum Ca²⁺-ATPases. Causes ER stress; can be used to induce autophagy in mammalian cells.

Physical and Chemical Properties:

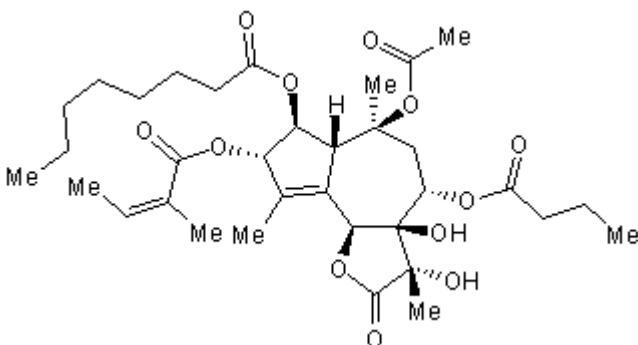
Batch Molecular Formula: C₃₄H₅₀O₁₂

Batch Molecular Weight: 650.76

Physical Appearance: Colourless lyophilised solid

Minimum Purity: >97%

Batch Molecular Structure:



Storage: Desiccate at -20°C

Solubility & Usage Info:

DMSO to 100 mM

This product is supplied in a sealed glass ampoule as a lyophilized solid, please refer to the Tocris catalogue for opening instructions. Lyophilized solids can be hard to visualize therefore solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Davidson and Varhol (1995) Kinetics of thapsigargin-Ca²⁺-ATPase (sarcoplasmic reticulum) interaction reveals a two-step binding mechanism and picomolar inhibition. *J.Biol.Chem.* **270** 11731. PMID: 7744817.

Treiman et al (1998) A tool coming of age: thapsigargin as an inhibitor of sarco-endoplasmic reticulum Ca²⁺-ATPases. *TIPS* **19** 131. PMID: 9612087.

Yu et al (1998) Specific substitutions at amino acid 256 of the sarcoplasmic/endoplasmic reticulum Ca²⁺ transport ATPase mediate resistance to thapsigargin in thapsigargin-resistant hamster cells. *J.Biol.Chem.* **273** 3542. PMID: 9452480.

Ding et al (2007) Differential effects of endoplasmic reticulum stress-induced autophagy on cell survival. *J.Biol.Chem.* **282** 4702. PMID: 17135238.

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