

## Small Molecules

### Thapsigargin

Inhibits sarco-endoplasmic reticulum Ca<sup>2+</sup>-ATPases (SERCAs)

Catalog #100-0568  
100-0569

1 mg  
5 mg



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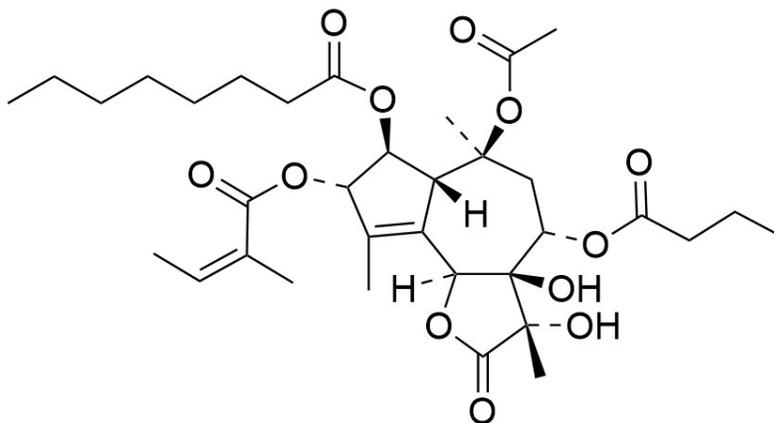
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## Product Description

Thapsigargin is a sesquiterpene lactone and a cell-permeable inhibitor of sarco-endoplasmic reticulum Ca<sup>2+</sup>-ATPases (SERCAs; Sabata et al.; Wictome et al.). It also induces autophagy in mammalian cells (Ding et al.).

Molecular Name:	Thapsigargin
Alternative Names:	Not applicable
CAS Number:	67526-95-8
Chemical Formula:	C <sub>34</sub> H <sub>50</sub> O <sub>12</sub>
Molecular Weight:	650.8 g/mol
Purity:	≥ 97%
Chemical Name:	(3S,3aS,4R,6R,7S,8R)-6-acetoxy-4-(butyryloxy)-3,3a-dihydroxy-3,6,9-trimethyl-8-(((Z)-2-methylbut-2-enyl)oxy)-2-oxo-2,3,3a,4,5,6,6a,7,8,9b-decahydro-1H-cyclopenta[e]azulen-7-yl octanoate

Structure:



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none"><li>• DMSO ≤ 45 mM</li><li>• Absolute ethanol ≤ 45 mM</li></ul> For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 154 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

## Published Applications

### CANCER RESEARCH

- Induces apoptosis in thymocytes in rats (Jiang et al.).
- Induces endoplasmic reticulum stress and autophagy in mammalian cells (Ding et al.).

## References

- Ding W-X et al. (2007) Differential effects of endoplasmic reticulum stress-induced autophagy on cell survival. *J Biol Chem* 282(7): 4702–10.
- Jiang S et al. (1994) Intracellular Ca<sup>2+</sup> signals activate apoptosis in thymocytes: studies using the Ca(2+)-ATPase inhibitor thapsigargin. *Exp Cell Res* 212(1): 84–92.
- Sabała P et al. (1993) Thapsigargin: potent inhibitor of Ca<sup>2+</sup> transport ATP-ases of endoplasmic and sarcoplasmic reticulum. *Acta Biochim Pol* 40(3): 309–19.
- Wictome M et al. (1995) Binding of sesquiterpene lactone inhibitors to the Ca(2+)-ATPase. *Biochem J* 310 ( Pt 3: 859–68.

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**This product is hazardous. Please refer to the Safety Data Sheet (SDS).**

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