

Thapsigargin

Cat. #: T-650

Origin: Isolated from the plant *Thapsia garganica*.

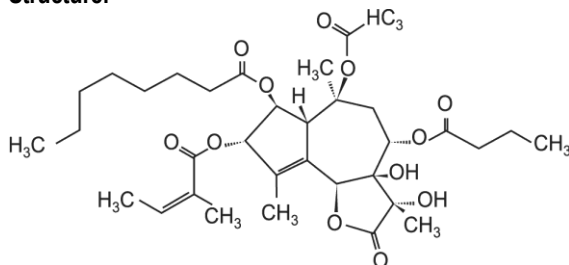
Source description: Natural.

M.W.: 650.7 daltons.

Purity: >99%.

Effective concentration: 50 nM - 1 μM.

Structure:



Chemical name: (3S,3aR,4S,6S,6AR,7S,8S,9bS)-6-(Acetyloxy)-2,3,3a,4,5,6,6a,7,8,9b-decahydro-3,3a-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.

Molecular formula: C₃₄H₅₀O₁₂.

CAS No.: 67526-95-8.

Activity: Thapsigargin is an extremely tight-binding inhibitor of intracellular Ca²⁺ pumps, but initially described as a tumor promoting agent which induces rapid Ca²⁺ release from intracellular stores¹. In addition, the thapsigargin induced depletion of Ca²⁺ stores causes apoptosis in most cell lines²⁻⁴.

References:

1. Jackson, T. R. *et al.* (1988) *Biochem. J.* **253**, 81.
2. Rodriguez-Lopez, A.M. *et al.* (1999) *Cell. Physiol. Biochem.* **9**, 285.
3. Waring, P and Beaver, J. (1996) *Exp. Cell. Res.* **227**, 264.
4. Wei, H. *et al.* (1998) *J. Neurochem.* **70**, 2305.

Sizes: 0.65 mg, 5 x 0.65 mg, 1 mg, 5 mg, 10 mg, or 10 x 0.25 mg lyophilized powder.

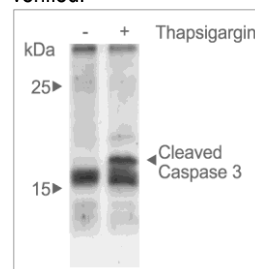
Storage before reconstitution: Lyophilized powder can be stored intact at room temperature for several weeks. For longer periods, it should be stored at -20°C.

Reconstitution: DMSO, Ethanol or Acetone. Centrifuge all product preparations before use (10000 x g 5 min).

Concentration after reconstitution: Dissolving 0.65 mg in 1 ml gives a stock solution of 1 mM.

Storage and stability after reconstitution: Up to one week at 4°C or three months at -20°C.

Bioassay: Thapsigargin induces apoptosis in Jurkat cells. Thapsigargin's ability to inhibit sarcoplasmic reticulum Ca²⁺ ATPase pump was also verified.



Cells were grown to 70% confluency. 1 μM Thapsigargin (#T-650) or vehicle was added for six hours. Cell extracts were then probed for cleaved Caspase 3 with specific antibodies.

For research purposes only, not for human use.
Last Update: March, 2010.