



Specification

Thapsigargin

A2229

Product Code:	A2229
Product Name:	Thapsigargin
Specifications:	Assay: min. 90 %
Hazard pictograms	 
WGK:	1
Storage:	-20°C protected from light
Signal Word:	Danger
GHS Symbols:	GHS07 GHS08
H Phrases:	H315 H319 H334 H335
P Phrases:	P261 P305+P351+P338 P342+P311
Molecular Formula:	C ₃₄ H ₅₀ O ₁₂
M:	650.76 g/mol
CAS:	67526-95-8
CS:	29419000

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Comment

Thapsigargin is a plant-derived sesquiterpene lactone from *Thapsia garganica*. It acts as a tumor promoter by releasing intracellular calcium independent of the formation of inositol phosphate and induces the influx of extracellular calcium (concentration 2 μ M, ref. 1). It specifically inhibits the Ca^{2+} -ATPase of the endoplasmic reticulum (IC_{50} = 30 nM, Ref. 2) and of the sarcoplasmic reticulum (10 pM, Ref. 3). At high doses (10 μ M), calcium will be released from mitochondria too (4). The protein synthesis and the early processing of proteins are inhibited by Thapsigargin, independent of the intracellular calcium concentration (2 nM and 1 μ M, respectively; ref. 5). Thapsigargin is soluble in DMSO or ethanol. Store protected from light. It is stable at room temperature for at least 10 days.

Bibliography

(1)Takemura, H. *et al.* (1989) *J. Biol. Chem.* **264**, 12266-12271 Activation of Calcium entry by the tumor promoter Thapsigargin in parotid acinar cells. (2)Thastrup, O. *et al.* (1990) *Proc. Natl. Acad. Sci. USA* **87**, 2466-2470 Thapsigargin, a tumor promoter, discharges intracellular Ca^{2+} stores by specific inhibition of the endoplasmic reticulum Ca^{2+} -ATPase. (3)Sagara, Y. & Inesi, G. (1991) *J. Biol. Chem.* **266**, 13503-13506 Inhibition of the sarcoplasmic reticulum Ca^{2+} transport ATPase by Thapsigargin at subnanomolar concentrations. (4)Vercesi, A.E. *et al.* (1993) *J. Biol. Chem.* **268**, 8564-8568 Thapsigargin causes a Ca^{2+} release and collapse of the membrane potential of *Trypanosoma brucei* mitochondria *in situ* and of isolated rat liver mitochondria. (5)Wong, W.L. *et al.* (1993) *Biochem. J.* **289**, 71-79 Inhibition of protein synthesis and early protein processing by Thapsigargin in cultured cells.

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