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#9995 Store at -20C

Ionomycin, Calcium Salt

2.5 mg

For Research Use Only. Not for Use in Diagnostic Procedures.

Background

Ionomycin is a potent and selective calcium ionophore agent (1,2). The molecule acts as a motile Ca^{2+} carrier and enhances Ca^{2+} influx by direct stimulation of store-regulated cation entry across biological membranes (3). At the micromolar level, ionomycin can activate Ca^{2+} /Calmodulin dependent kinase and phosphatase to stimulate gene expression (4). In human T cells, ionomycin induces hydrolysis of phosphoinositides and activates PKC to mediate T cell activation (5). Ionomycin treatment of human B cells induces the activation of calcium-dependent endonuclease and results in apoptosis (6). Ionomycin treatment of bovine aortic endothelial cells (BAECs) induces rapid dephosphorylation of eNOS at Thr495 and mediates eNOS activation (7).

Molecular Formula

$\text{C}_{41}\text{H}_{70}\text{O}_9 \cdot \text{Ca}^{2+}$

Molecular Weight

747.08 g/mol

Purity

>99%

CAS

56092-82-1

Solubility

Soluble in DMSO at 1.6mg/ml and EtOH at 20mg/ml.

Storage

Store lyophilized or in solution at -20°C , desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use

Ionomycin, calcium salt is supplied as 2.5 mg powder. Store at or below -20°C . Before use, dissolve powder in 1.1 ml DMSO to make a 3 mM ionomycin stock solution. For working concentrations of 1 μM -3 μM , dilute DMSO stock 1:3000 to 1:1000. Treat cells with the desired concentration for intended time.

Background References

1. Liu, C. and Hermann, T.E. (1978) *J Biol Chem* 253, 5892-4.
2. Kauffman, R.F. et al. (1980) *J Biol Chem* 255, 2735-9.
3. Morgan, A.J. and Jacob, R. (1994) *Biochem J* 300 (Pt 3), 665-72.
4. Lobo, F.M. et al. (1999) *J Immunol* 162, 2057-63.
5. Chatila, T. et al. (1989) *J Immunol* 143, 1283-9.
6. Aagaard-Tillery, K.M. and Jelinek, D.F. (1995) *J Immunol* 155, 3297-307.
7. Lin, M.I. et al. (2003) *J Biol Chem* 278, 44719-26.

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