

PRODUCT INFORMATION



Ionomycin

Item No. 10004974

CAS Registry No.: 56092-81-0
Formal Name: (4R,6S,8S,10Z,12R,14R,16E,18R,19R,20S,21S)-11,19,21-trihydroxy-4,6,8,12,14,18,20-heptamethyl-22-[[2S,2'R,5S,5'S]-octahydro-5'-[(1R)-1-hydroxyethyl]-2,5'-dimethyl[2,2'-bifuran]-5-yl]-9-oxo-10,16-docosadienoic acid

MF: C₄₁H₇₂O₉

FW: 709.0

Purity: ≥95%

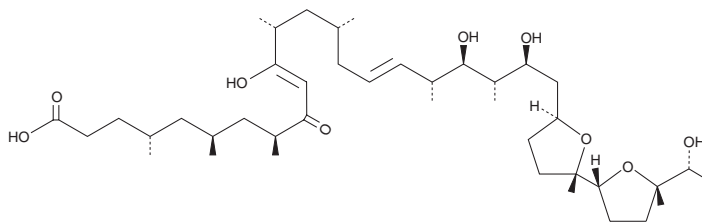
UV/Vis.: λ_{max}: 277 nm

Supplied as: A solution in ethanol

Storage: -20°C

Stability: ≥2 years

Item Origin: Bacteria/*Streptomyces globatus*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ionomycin is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of ionomycin in these solvents is approximately 1.4 and 2.5 mg/ml, respectively.

Ionomycin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of ionomycin should be diluted with the aqueous buffer of choice. Ionomycin has a solubility of approximately 0.1 mg/ml in a 1:10 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ionomycin is a calcium ionophore originally isolated from *S. globatus*.¹ It induces intracellular calcium mobilization in *X. laevis* oocytes when used at a concentration of 5 μM. Ionomycin (5 μM) induces the formation of neutrophil extracellular traps (NETs) in isolated human neutrophils.² Ionomycin in combination with phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) has commonly been used to induce the proliferation and activation of T cells, as well as to stimulate cytokine production in macrophages, *in vitro*.^{3,4}

References

1. Liu, W.-C., Slusarchyk, D.S., Astle, G., *et al.* Ionomycin, a new polyether antibiotic. *J. Antibiot.* **31(9)**, 815-819 (1978).
2. Locke, M., Francis, R.J., Tsaousi, E., *et al.* Fibrinogen protects neutrophils from the cytotoxic effects of histones and delays neutrophil extracellular trap formation induced by ionomycin. *Sci. Rep.* **10(1)**, 11694 (2020).
3. Lehnert, C., Weiswange, M., Jeremias, I., *et al.* TRAIL-receptor costimulation inhibits proximal TCR signaling and suppresses human T cell activation and proliferation. *J. Immunol.* **193(8)**, 4021-4031 (2014).
4. Foey, A.D. and Brennan, F.M. Conventional protein kinase C and atypical protein kinase Cζ differentially regulate macrophage production of tumour necrosis factor-α and interleukin-10. *Immunology* **112(1)**, 44-53 (2004).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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