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ProductInformation

U-73122

Product Number **U 6756**
Store at Room Temperature

Product Description

Molecular Formula: $C_{29}H_{40}N_2O_3$
Molecular Weight: 464.7
CAS Number: 112648-68-7

U73122 is a phospholipase C and A_2 inhibitor which inhibits the hydrolysis of PPI (phosphatidylinositol) to IP_3 (inositol triphosphate) leading to a decrease in free cytosolic Ca^{2+}. It also acts to inhibit the coupling of G-protein phospholipase C activation, while being unaffected by production of cAMP.

The hydrolysis of phosphatidylinositol-4,5-bisphosphate (PIP_2) by a specific phospholipase C is one of the earliest key events in the regulation of various cell functions by more than 100 extracellular signaling molecules. This reaction produces two intracellular messengers, diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP_3), which mediate the activation of protein kinase C and intracellular calcium, respectively. U73122 acts as as specific inhibitor of G-protein mediated phospholipase C in this signalling pathway, as determined by studies of Ca^{2+} oscillations.[1]

It has also been shown to inhibit the action of thyrotropin releasing hormone (TRH) in rat pituitary[2] and to inhibit receptor-coupled mobilization of arachidonic acid.[3] These data suggest that the mode of action of U73122 is not simply that of an enzyme inhibitor but may affect other cellular functions as well.[4,5]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

U-73122 is soluble in chloroform (10 mg/ml), DMSO (0.9 mg/ml), ethanol (0.7 mg/ml), and is insoluble in water. Higher concentrations in DMSO (2.6 mg/ml) and ethanol (5 mg/ml) can be achieved by heating.

References

1. Yule, D. I., and Williams, J. A., U73122 inhibits Ca^{2+} oscillations in response to cholecystokinin and carbochol but not to JMV-180 in rat pancreatic acinar cells. J. Biol. Chem., **267(20)**, 13830-13835 (1992).
2. Smallridge, R. C., et al., U73122, an aminosteroid phospholipase C antagonist noncompetitively inhibits thyrotropin releasing hormone effects in GH3 rat pituitary cells. Endocrinology, **131(4)**, 1883-1888 (1992).
3. Bleasdale, J. E., et al., Selective inhibition of receptor-coupled phospholipase C-dependent processes in human platelets and polymorphonuclear neutrophils. J. Pharmacol. Exp. Ther., **255(2)**, 756-768 (1990).
4. De Moel, M. P., et al., Effect of the aminosteroid, U73122, on Ca^{2+} uptake and release properties of rat liver microsomes. Eur. J. Biochem., **234(2)**, 626-631 (1995).
5. Bosch, R. R., et al., U73122 and U73343 inhibit receptor-mediated phospholipase D activation downstream of phospholipase C in CHO cells. Eur. J. Biochem., **346(2-3)**, 345-351 (1998).

JLH/RXR 10/03