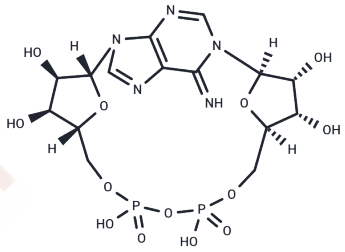
Data Sheet (Cat.No.T19253)

TargetMol

Cyclic ADP-ribose

Chemical Properties



CAS No. : 119340-53-3

Formula: C15H21N5O13P2

Molecular Weight: 541.3

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Cyclic ADP-ribose (cADPR) is an effective calcium mobilization second messenger synthesized from NAD+ by ADP-ribosyl cyclase. It mainly increases cytosolic calcium through Ryanodine receptor-mediated endoplasmic reticulum release and extracellular influx via the opening of TRPM2 channels.
Targets(IC50)	Calcium Channel,Endogenous Metabolite,TRP/TRPV Channel
In vitro	In cells, cyclic ADP ribose (cADPR) plays an important role in the following processes: cell proliferation and differentiation, regulating for example the expansion of mesenchymal stem cells and hematopoietic progenitor cells, neuronal differentiation of PC12 cells and mouse embryonic stem cells Cardiomyocyte differentiation.
In vivo	In mammals, cyclic ADP-ribose (cADPR) plays an important role in the following processes: inflammation and immune response, including neutrophil chemotaxis and T cell activation; smooth muscle cell contraction in arteries and bronchial tubes, involved Hypoxic pulmonary vasoconstriction and the pathogenesis of inflammation / allergic airway diseases; myometrial contractility, which ultimately helps delivery; myocardial cell contraction in adult heart tissue, involved in angiotensin II and β-adrenaline Myocardial hypertrophy and arrhythmia caused by isoproterenol; endocrine and exocrine pancreatic secretion; social behavior of mice, including memory formation and spatial learning, are related to oxytocin secretion and may be related to niacin deficiency. In addition, cyclic ADP-ribose (cADPR) is involved in the activation and fertilization of eggs in seaweeds and sea urchins, early development of sea urchins, abscisic acid signaling in sponges and plants, cell fission in dinoflagellates, and pathogenicity of Toxoplasma gondii.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8474 mL	9.237 mL	18.474 mL
5 mM	0.3695 mL	1.8474 mL	3.6948 mL
10 mM	0.1847 mL	0.9237 mL	1.8474 mL
50 mM	0.0369 mL	0.1847 mL	0.3695 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ribeiro JM, et al. Specific cyclic ADP-ribose phosphohydrolase obtained by mutagenic engineering of Mn2+-dependent ADP-ribose/CDP-alcohol diphosphatase. Sci Rep. 2018 Jan 18;8(1):1036.