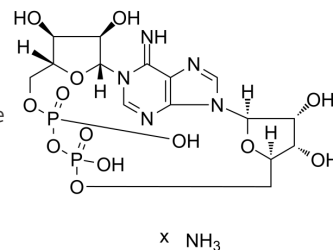


Cyclic ADP-ribose ammonium

Cat. No.:	HY-N7395A
Molecular Formula:	$C_{15}H_{21}N_5O_{13}P_2 \cdot xNH_3$
Target:	Calcium Channel; TRP Channel; Endogenous Metabolite
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description	Cyclic ADP-ribose ammonium (cADPR ammonium) is a potent second messenger for calcium mobilization that is synthesized from NAD ⁺ by an ADP-ribosyl cyclase. Cyclic ADP-ribose ammonium increases cytosolic calcium mainly by Ryanodine receptor-mediated release from endoplasmic reticulum and also by extracellular influx through the opening of TRPM2 channels ^{[1][2][3]} . Caution: Product has not been fully validated for medical applications. For research use only.
IC₅₀ & Target	Tel: 609-228-6898 ^[1] Fax: 609-228-5909 E-mail: tech@MedChemExpress.com Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA Calcium mobilization ^[1] TRPM2 channels ^[1] Endogenous metabolite ^[1]
In Vitro	cADPR (20 nM) elicits a large rapid Ca ²⁺ release in sea urchin eggs homogenates ^[1] . cADPR (100 μM; 10 min) induces a sustained elevation of intracellular calcium concentration in a subset (64%) of cultured astrocytes ^[4] . cADPR (100 μM) and heat (35-38.5 °C) stimulates oxytocin OT release from the isolated hypothalami of male mice in culture ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	cADPR (100 μM; push-pull type of brain microperfusion) elevates OT concentrations in ordinate or subordinate mice ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Galione A, et, al. Ca(2+)-induced Ca2+ release in sea urchin egg homogenates: modulation by cyclic ADP-ribose. Science. 1991 Sep 6;253(5024):1143-6.
- [2]. Lee HC, et, al. Structural determination of a cyclic metabolite of NAD⁺ with intracellular Ca²⁺-mobilizing activity. J Biol Chem. 1989 Jan 25;264(3):1608-15.
- [3]. Ribeiro JM, et, al. Specific cyclic ADP-ribose phosphohydrolase obtained by mutagenic engineering of Mn 2+-dependent ADP-ribose/CDP-alcohol diphosphatase. Sci Rep. 2018 Jan 18;8(1):1036.
- [4]. Verderio C, et, al. Evidence of a role for cyclic ADP-ribose in calcium signalling and neurotransmitter release in cultured astrocytes. J Neurochem. 2001 Aug;78(3):646-57.
- [5]. Zhong J, et, al. Cyclic ADP-Ribose and Heat Regulate Oxytocin Release via CD38 and TRPM2 in the Hypothalamus during Social or Psychological Stress in Mice. Front Neurosci. 2016 Jul 22;10:304.