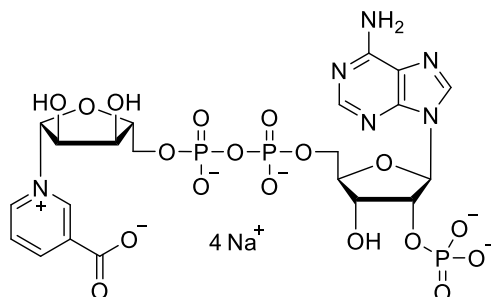


Technical Information about β -NAADP⁺

Update: May 10, 2022 is



Abbreviation: β -NAADP⁺

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₂₁ H ₂₇ N ₆ O ₁₈ P ₃ (free acid)	[5502-96-5]	744.4 (free acid)	λ_{max} 259 nm / ϵ 18000 / pH 7	N 018

Name: β - Nicotinic acid adenine dinucleotide phosphate

Description: β -NAADP⁺ is an analogue of nicotinamide adenine dinucleotide phosphate (β -NADP) in which the nicotinamide ring is replaced by nicotinic acid.

Properties: β -NAADP⁺ is a potent stimulator of intracellular Ca²⁺ mobilization in a variety of cell types, with its mechanism of action being distinct from those of cyclic adenosine diphosphate ribose (cADPR, BIOLOG Cat. No. C 005) and inositol-1,4,5-triphosphate (IP₃). The function of β -NAADP⁺ was first demonstrated in sea urchin egg homogenates.

Specification: Lyophilized or crystallized sodium salt. Other salt forms are available upon request. Equal concentrations of β -NAADP⁺ can appear very different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ_{max} .

Purity: Typical analysis is better than 95% (HPLC / UV / 259 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: β -NAADP⁺ is readily soluble in water. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

Stability and Storage: β -NAADP⁺ has limited stability at ambient temperature. We recommend that the compound should be stored in the freezer (-20° Celsius necessary, -80° recommended), for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Please keep in mind, that the *in vivo* properties of this compound are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product.

Our products are designed, developed and sold for research purposes only! They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.

Not for drug, household or related uses!

Selected References for β -NAADP⁺:

Guse, A.H.; Diercks, B-P., *J.Physiol.*, **596**, 2735 - 2743 (2018): "Integration of Nicotinic Acid Adenine Dinucleotide Phosphate (NAADP)-Dependent Calcium Signalling"

Schmid, F.; Bruhn, S.; Weber, K.; Mittrücker, H.-W.; Guse, A.H., *FEBS Lett.*, **585**, 3544 - 3548 (2011): "CD38: A NAADP Degrading Enzyme"

Rah, S.-Y.; Mushtaq, M.; Nam, T.-S.; Kim, S.H.; Kim, U.-H., *J. Biol. Chem.*, **285**, 21877 - 21887 (2010): "Generation of Cyclic ADP-ribose and Nicotinic Acid Adenine Dinucleotide Phosphate by CD38 for Ca^{2+} Signaling in Interleukin-8-treated Lymphokine-activated Killer Cells"

Preugschat, F.; Tomberlin, G.H.; Porter, D.J.T., *Arch. Biochem. Biophys.*, **479**, 114 - 120 (2008): "The Base Exchange Reaction of NAD^+ Glycohydrolase: Identification of Novel Heterocyclic Alternative Substrates"

Lee, H.C., *J. Biol. Chem.*, **280**, 33693 - 33696 (2005): "Nicotinic Acid Adenine Dinucleotide Phosphate (NAADP)-mediated Calcium Signaling"

Berg, I.; Potter, B.V.L.; Mayr, G.W.; Guse, A.H., *J. Cell Biol.*, **150**, 581 - 588 (2000): "Nicotinic Acid Adenine Dinucleotide Phosphate (NAADP⁺) is an Essential Regulator of T-Lymphocyte Ca^{2+} -Signaling"

Chini, E.N.; Beers, K.W.; Dousa, T.P., *J Biol Chem.*, **270**, 3216 - 3223 (1995): "Nicotinate Adenine Dinucleotide Phosphate (NAADP) Triggers a Specific Calcium Release System in Sea Urchin Eggs"

Lee, H.C.; Aarhus, R., *J. Biol. Chem.*, **270**, 2152 - 2157 (1995): "A Derivative of NADP Mobilizes Calcium Stores Insensitive to Inositol Trisphosphate and Cyclic ADP-Ribose"