

Product Information

β -Nicotinamide adenine dinucleotide 2'-phosphate reduced tetrasodium salt hydrate

 $\geq 95\%$ (HPLC)**N6505**

Product Description

CAS Registry Number: 2646-71-1

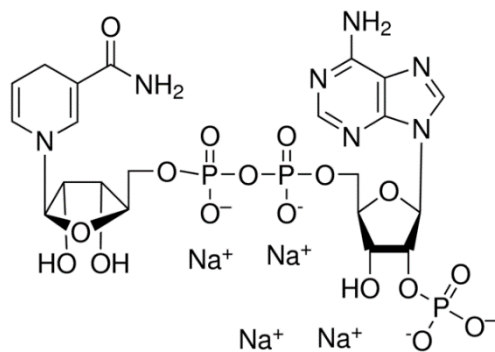
Synonyms: β -NADPH, Coenzyme II reduced tetrasodium salt, 2'-NADPH hydrate, NADPH, TPNH, Triphosphopyridine nucleotide reduced tetrasodium salt, NADPH Na₄, TPNH₂ Na₄, Dihydronicotinamide adenine dinucleotide phosphate tetrasodium salt

Molecular Formula: C₂₁H₂₆N₇Na₄O₁₇P₃ • xH₂O

Formula Weight: 833.35 (anhydrous basis)

 $E_{\text{mM}}^{260}(340\text{nm}) = 6.22$ (pH >10) $A_{260\text{nm}} / A_{340\text{nm}} = 2.32$

Structure:



β -Nicotinamide adenine dinucleotide 2'-phosphate (β -NADPH) is a product of the pentose phosphate pathway, a multifunctional pathway whose primary purpose is to generate reducing power, in the form of β -NADPH. β -NADPH transfers H^+ and 2e^- to oxidized precursors in the reduction reactions of biosynthesis. Thus, β -NADPH cycles between catabolic and biosynthetic reactions, and serves as the carrier of reducing power in the same way that ATP serves as the carrier of energy.¹

Enzymes that use β -NADPH as a coenzyme include glutathione reductase, diacetyl reductase, dihydrofolate reductase, glutamic dehydrogenase, *p*-hydroxybenzoate hydroxylase, NADPH-FMN oxidoreductase, nitrate reductase and thioredoxin reductase. β -NADPH is also involved with cytochrome P450 electron transport systems.²

This listing of β -Nicotinamide adenine dinucleotide phosphate reduced form, N6505, is prepared by enzymatic reduction. Several publications,³ theses⁴⁻⁷ and dissertations⁸⁻¹³ have cited use of N6505 in their research protocols.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

It is recommended to store N6505 desiccated at $-20\text{ }^\circ\text{C}$, protected from light. The normal impurities and/or decomposition products are β -NADP and Monophosphoadenosine 5'-diphosphoribose.

It is suggested to prepare β -NADPH solutions fresh and use promptly, unless you are sure that this is an unnecessary precaution for your work. However, it has been reported that a 0.5 mM solution in 0.02 M NaOH (pH 12.3) showed no loss of purity in a week at $4\text{ }^\circ\text{C}$ or $-85\text{ }^\circ\text{C}$, but a 13% loss at $-20\text{ }^\circ\text{C}$.¹⁴ One publication has investigated the solution stability of NADPH.¹⁵

Preparation Instructions

β -NADPH is tested for solubility in 0.01 M sodium hydroxide at 50 mg/mL.

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N6505pis Rev 03/22 DAG,NA,GCY,MAM

