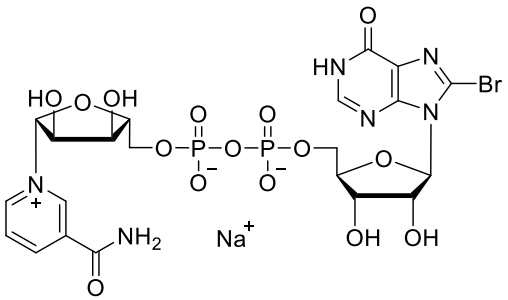
Technical Information about 8-Br-NHD$^+$

Update: May 20, 2019 HJ



Abbreviation: **8-Br-NHD$^+$**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{21}H_{25}BrN_6O_{15}P_2$ (free acid)	[477782-33-5]	743.3 (free acid)	λ_{max} 254 nm / ε 14700 / pH 5.6	N 006

Name: β- Nicotinamide- 8- bromohypoxanthine dinucleotide

Description: 8-Br-NHD$^+$ is an analogue of NAD$^+$ in which the hydrogen in position 8 of the nucleobase is replaced by a lipophilic bromine. In addition, the amino group in position 6 is replaced by oxygen, leading to altered molecular interaction potential of the N-1 / C-6 moiety.

Properties: 8-Br-NHD$^+$ is a lipophilic analogue of β-NAD$^+$ and potential substrate, competitive inhibitor or regulator of enzymes that interact with β-NAD$^+$. It can be used as starting material for nucleophilic substitutions at position 8 and is also suitable as a precursor for cyclisation at position N-1, leading to 8-Br-N^1-cIDPR (BIOLOG Cat. No. B 071), a membrane-permeant cADPR agonist.

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of 8-Br-NHD$^+$ 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 / 254 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: 8-Br-NHD$^+$ is easily soluble in water or buffer. 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: 8-Br-NHD$^+$ has limited stability at ambient temperature. We recommend to store the compound in the freezer (- 20° Celsius necessary, - 70° recommended), for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Since β-NAD$^+$ has multiple tasks in every organism, it is very likely that its analogues will interfere with many cell regulation processes *in vivo*. However, due to the rather small quantities to work with, no health hazards have been reported. Nevertheless 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 8-Br-NHD$^+$:

Wagner, G.K.; Black, S.; Guse, A.H.; Potter, B.V.L., *Chem. Commun.*, **15**, 1944 - 1945 (2003): "First Enzymatic Synthesis of an N1-cyclised cADPR (Cyclic-ADP Ribose) Analogue with a Hypoxanthine Partial Structure: Discovery of a Membrane Permeant cADPR Agonist"

Wagner, G.K.; Riley, A.M.; Rosenberg, H.J.; Taylor, C.W.; Guse, A.H.; Potter, B.V., *Nucleic Acids Res. Suppl.*, **3**, 1 - 2 (2003): "Analogues of Cyclic Adenosine 5'-Diphosphate Ribose and Adenophostin A, Nucleotides in Cellular Signal Transduction"

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