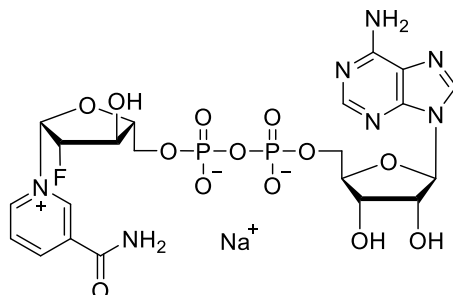


Technical Information about *ara*-2'-F-NAD⁺

Update: May 20, 2019 HU



Abbreviation: *ara*-2'-F-NAD⁺

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat.No.
C ₂₁ H ₂₆ FN ₇ O ₁₃ P ₂	[133575-27-6]	665.4 (free acid)	λ _{max} 260 nm / ε 20000 / pH 7	D 148

Name: β- *ara*-2'- Deoxy- 2'- fluoro- nicotinamide adenine dinucleotide

Syn.: β-*ara*F-NAD⁺ / β-2'-Fluoro-*ara*-NAD⁺ / 2'-Fluoro-2'-deoxy-substituted nicotinamide arabinoside adenine dinucleotide

Description: *ara*-2'-F-NAD⁺ is an analogue of β-NAD⁺ in which the nicotinamide-connected ribose is replaced by 2'-fluoro arabinose.

Properties: *ara*-2'-F-NAD⁺ is a hydrolysis-resistant slow binding inhibitor of ADP-ribosyl cyclase (i.e. CD 38).

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of *ara*-2'-F-NAD⁺ 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 97% (HPLC / UV / 260 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: *ara*-2'-F-NAD⁺ has excellent solubility in water and aqueous buffers (> 30 mM, limits have not been determined). 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: *ara*-2'-F-NAD⁺ aliquots (freeze-dried or in solution) are sufficiently stable to be stored up to 7 days at room temperature. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form (-20 degrees Celsius necessary, -80 degrees Celsius recommended).

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 *ara*-2'-F-NAD⁺:

Rah, S.-Y.; Kwak, J.-Y.; Chung, Y.-J.; Kim, U.-H., *Sci. Rep.*, **5**, 9482. Doi (2015): "ADP-Ribose/TRM2-mediated Ca²⁺ Signaling is Essential for Cytolytic Degranulation and Antitumor Activity of Natural Killer Cells"

Gerth, A.; Nieber, K.; Oppenheimer, N.J.; Hauschildt, S., *Biochem. J.*, **382**, 849 - 856 (2004): "Extracellular NAD⁺ Regulates Intracellular Free Calcium Concentration in Human Monocytes"

Berthelie, V.; Tixier, J.-M.; Muller-Steffner, H.; Schuber, F.; Deterre, P., *Biochem. J.*, **330**, 1383 - 1390 (1998): "Human CD38 is an Authentic NAD(P)⁺ Glycohydrolase"

Muller-Steffner, H.M.; Malver, O.; Hosie, L.; Oppenheimer, N.J.; Schuber, F., *J. Biol. Chem.*, **267**, 9606 - 9611 (1992): "Slow-binding Inhibition of NAD⁺ Glycohydrolase by Arabino Analogues of β-NAD⁺"