

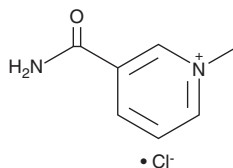
PRODUCT INFORMATION



1-Methylnicotinamide (chloride)

Item No. 16604

CAS Registry No.: 1005-24-9
Formal Name: 3-(aminocarbonyl)-1-methylpyridinium, monochloride
Synonyms: N¹-Methylnicotinamide chloride, Nicotinamide methochloride, Trigonellamide chloride
MF: C₇H₉N₂O • Cl
FW: 172.6
Purity: ≥95%
UV/Vis.: λ_{max}: 266 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

1-Methylnicotinamide (chloride) is supplied as a crystalline solid. Aqueous solutions of 1-methylnicotinamide (chloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 1-methylnicotinamide (chloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Nicotinamide is a precursor of NAD (Item No. 16077) and NADP (Item No. 10004675), which serve essential functions in modulating cellular redox status and controlling signaling and transcriptional events. 1-Methylnicotinamide (MNA) is a primary metabolite of nicotinamide produced by the action of nicotinamide N-methyltransferase (NNMT; Item No. 15138).¹ It demonstrates antithrombotic and anti-inflammatory properties through direct action on the endothelium by a mechanism involving the prostacyclin pathway and by improving nitric oxide bioavailability.^{2,3} Aggressive cancer cell lines are reported to have higher levels of MNA due to increased NNMT-directed transfer of methyl groups from S-adenosyl-L-methionine to nicotinamide, implicating a role for MNA in cancer cell metabolism.^{4,5}

References

1. Alston, T.A. and Abeles, R.H. Substrate specificity of nicotinamide methyltransferase isolated from porcine liver. *Arch. Biochem. Biophys.* **260(2)**, 601-608 (1988).
2. Chlopicki, S., Swies, J., Mogielnicki, A., et al. 1-Methylnicotinamide (MNA), a primary metabolite of nicotinamide, exerts anti-thrombotic activity mediated by a cyclooxygenase-2/prostacyclin pathway. *Br. J. Pharmacol.* **152(2)**, 230-239 (2007).
3. Domagala, T.B., Szeffler, A., Dobrucki, L.W., et al. Nitric oxide production and endothelium-dependent vasorelaxation ameliorated by N¹-methylnicotinamide in human blood vessels. *Hypertension* **59(4)**, 825-832 (2012).
4. Ulanovskaya, O.A., Zuhl, A.M., and Cravatt, B.F. NNMT promotes epigenetic remodeling in cancer by creating a metabolic methylation sink. *Nat. Chem. Biol.* **9(5)**, 300-306 (2013).
5. Shlomi, T. and Rabinowitz, J.D. Cancer mistunes methylation. *Nat. Chem. Biol.* **9(5)**, 293-294 (2013).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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