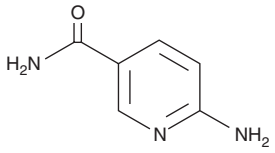
PRODUCT INFORMATION

6-Aminonicotinamide

Item No. 10009315

CAS Registry No.:	329-89-5
Formal Name:	6-amino-3-pyridinecarboxamide
Synonyms:	6-AN, NSC 21206, SR 4388
MF:	$C_6H_7N_3O$
FW:	137.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 269 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

6-Aminonicotinamide is supplied as a crystalline solid. A stock solution may be made by dissolving the 6-aminonicotinamide in the solvent of choice, which should be purged with an inert gas. 6-Aminonicotinamide is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 6-aminonicotinamide in these solvents is approximately 1 and 2 mg/ml, respectively.

6-Aminonicotinamide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 6-aminonicotinamide should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 6-Aminonicotinamide has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

6-Aminonicotinamide (6-AN) is a well-established inhibitor of the $NADP^+$-dependent enzyme, 6-phosphogluconate dehydrogenase (K_i = 0.46 µM).[1] Through this action, 6-AN interferes with glycolysis, resulting in ATP depletion and synergizes with DNA-crosslinking chemotherapy drugs, like cisplatin, in killing cancer cells (IC_{50} = 0.5 mM).[2,3] 6-AN also reduces cardiovascular oxidative injury following ischemia/reperfusion.[4] In addition, 6-AN causes glial neurodegeneration.[5]

References

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2. Street, J.C., Alfieri, A.A., and Koutcher, J.A. Quantitation of metabolic and radiobiological effects of 6-aminonicotinamide in RIF-1 tumor cells *in vitro*. *Cancer Res.* **57(18)**, 3956-3962 (1997).
3. Belfi, C.A., Chatterjee, S., Gosky, D.M., *et al.* Increased sensitivity of human colon cancer cells to DNA cross-linking agents after GRP78 up-regulation. *Biochem. Biophys. Res. Commun.* **257(2)**, 361-368 (1999).
4. Zuurbier, C.J., Eerbeek, O., Goedhart, P.T., *et al.* Inhibition of the pentose phosphate pathway decreases ischemia-reperfusion-induced creatine kinase release in the heart. *Cardiovasc. Res.* **62(1)**, 145-153 (2004).
5. Penkowa, M., Quintana, A., Carrasco, J., *et al.* Metallothionein prevents nuerodegeneration and central nervous system cell death after treatment with gliotoxin 6-aminonicotinamide. *J. Neurosci. Res.* **77(1)**, 35-53 (2004).

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