

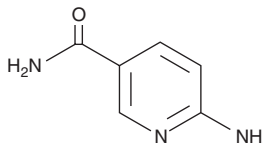
# PRODUCT INFORMATION



## 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<sub>6</sub>H<sub>7</sub>N<sub>3</sub>O  
**FW:** 137.1  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 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<sup>+</sup>-dependent enzyme, 6-phosphogluconate dehydrogenase (K<sub>i</sub> = 0.46 μM).<sup>1</sup> 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<sub>50</sub> = 0.5 mM).<sup>2,3</sup> 6-AN also reduces cardiovascular oxidative injury following ischemia/reperfusion.<sup>4</sup> In addition, 6-AN causes glial neurodegeneration.<sup>5</sup>

### References

1. Lange, K. and Proft, E.R. Inhibition of the 6-phosphogluconate dehydrogenase in the rat kidney by 6-aminonicotinamide. *Naunyn Schmiedeberg's Arch. Pharmacol.* **267(2)**, 177-180 (1970).
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 neurodegeneration and central nervous system cell death after treatment with gliotoxin 6-aminonicotinamide. *J. Neurosci. Res.* **77(1)**, 35-53 (2004).

#### 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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