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Product Information

(-)-Cotinine

Product Number **C 5923**

Storage Temperature 2-8 °C

Replacement for Product Code 28,471-8

Product Description

Molecular Formula: C₁₀H₁₂N₂O

Molecular Weight: 176.2

CAS Number: 486-56-6

Melting Point: 48-50 °C

Synonyms: 1-methyl-5-(3-pyridinyl)-2-pyrrolidinone,
N-methyl-2-(3-pyridinyl)-5-pyrrolidinone¹

Cotinine is a metabolite of nicotine that is produced in the liver. It can act as a biomarker of cigarette smoke and may contribute to the neuropharmacological activity of nicotine and tobacco smoking in humans.^{2,3} Cotinine may be chemically prepared from the treatment of nicotine with hydrogen peroxide or from the irradiation of nicotine with ultraviolet light.¹

Cotinine has been detected in rat brain after acute peripheral administration of radiolabeled nicotine.⁴ Cotinine levels in blood have been examined by gas liquid chromatography.⁵ A protocol for the HPLC-MS analysis of cotinine and other nicotine metabolites in serum or urine has been published.⁶

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (50 mg/ml), yielding a clear, faint yellow to yellow solution.

References

1. The Merck Index, 12th ed., Entry# 2619.
2. Haufroid, V., and Lison, D., Urinary cotinine as a tobacco-smoke exposure index: a minireview. *Int. Arch. Occup. Environ. Health*, **71(3)**, 162-168 (1998).
3. Crooks, P. A., and Dvoskin, L. P., Contribution of CNS nicotine metabolites to the neuropharmacological effects of nicotine and tobacco smoking. *Biochem. Pharmacol.*, **54(7)**, 743-753 (1997).
4. Ghosheh, O., et al., Residence Times and Half-Lives of Nicotine Metabolites in Rat Brain after Acute Peripheral Administration of [2'-¹⁴C]Nicotine. *Drug Metab. Dispos.*, **27(12)**, 1448-1455 (1999).
5. Green, J. T., et al., An oral formulation of nicotine for release and absorption in the colon: its development and pharmacokinetics. *Br. J. Clin. Pharmacol.*, **48(4)**, 485-493 (1999).
6. Moyer, T. P., et al., Simultaneous analysis of nicotine, nicotine metabolites, and tobacco alkaloids in serum or urine by tandem mass spectrometry, with clinically relevant metabolic profiles. *Clin. Chem.*, **48(9)**, 1460-1471 (2002).

GCY/NSB 6/03

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