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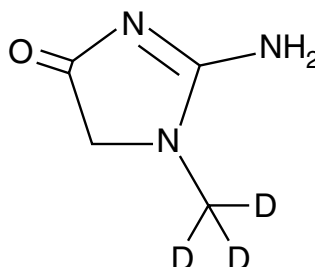


Product Information



Creatinine-d₃ Item No. 16763

CAS Registry No.: 143827-20-7
Formal Name: 2-amino-1,5-dihydro-1-(methyl-d₃)-4H-imidazol-4-one
MF: C₄H₄D₃N₃O
FW: 116.1
Chemical Purity: ≥98% Creatinine
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 236 nm



Laboratory Procedures

Creatinine-d₃ contains three deuterium atoms at the methyl position. It is intended for use as an internal standard for the quantification of creatinine by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that creatinine-d₃ be stored as supplied at -20°C. It should be stable for at least two years.

Creatinine-d₃ is supplied as a crystalline solid. A stock solution may be made by dissolving the creatinine-d₃ in the solvent of choice. Creatinine-d₃ is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of creatinine-d₃ be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of creatinine-d₃ in PBS, pH 7.2, is approximately 10 mg/ml.

Creatinine-d₃ is used as an internal standard for the quantification of creatinine by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Creatinine is synthesized in kidney, liver, and pancreas and transported in blood to muscle and brain where it is phosphorylated to phosphocreatine. Some free creatine in muscle is converted to creatinine. The amount of creatinine produced is proportional to muscle mass. In the absence of renal disease, the excretion rate of creatinine in humans is relatively constant.¹ Thus, urinary creatinine is commonly used as a key benchmark for the normalization of a variety of urinary biomarkers. Serum creatinine levels are a useful indicator of renal function.² Abnormal creatinine levels have been implicated in diabetes and in cardiovascular and circulatory diseases.

References

1. Barrett, E. and Addis, T. The serum creatinine concentration of normal individuals. *J. Clin. Invest.* **26**(5), 875-878 (1947).
2. Bowers, L.D. and Wong, E.T. Kinetic serum creatinine assays. II. A critical evaluation and review. *Clin. Chem.* **26**(5), 555-561 (1980).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16763

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

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