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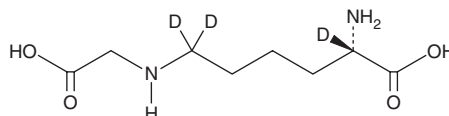
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PRODUCT INFORMATION

N^ε-(1-Carboxymethyl)-L-lysine-d₃

Item No. 26785

Formal Name: N^ε-(carboxymethyl)-L-lysine-2,6,6-d₃
Synonym: CML-d₃
MF: C₈H₁₃D₃N₂O₄
FW: 207.2
Chemical Purity: ≥98% (N^ε-(1-Carboxymethyl)-L-lysine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

N^ε-(1-Carboxymethyl)-L-lysine-d₃ (CML-d₃) is intended for use as an internal standard for the quantification of CML (Item No. 16483) by GC- or LC-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).

Description

CML is an advanced glycation end product (AGE), produced by the oxidative modification of glycated proteins during oxidative stress.¹⁻³ Levels of CML increase with aging and during diabetes, cancer, vascular disease, and other pathologies marked by oxidative stress.^{1,4,5} CML activates the membrane-bound receptor for AGEs (RAGE), triggering signaling through MAPKs and NF-κB, whereas truncation of RAGE produces a soluble protein that binds CML and reduces signaling.^{6,7}

References

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2. Ahmed, M.U., Brinkmann, F.E., Degenhardt, T.P., *et al.* N^ε-(carboxyethyl)lysine, a product of the chemical modification of proteins by methylglyoxal, increases with age in human lens proteins. *Biochem. J.* **324(Pt 2)**, 565-570 (1997).
3. Schleicher, E.D., Wagner, E., and Nerlich, A.G. Increased accumulation of the glycoxidation product N^ε-(carboxymethyl)lysine in human tissues in diabetes and aging. *J. Clin. Invest.* **99(3)**, 457-468 (1997).
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6. Schmidt, A.M., Yan, S.D., Yan, S.F., *et al.* The biology of the receptor for advanced glycation end products and its ligands. *Biochim. Biophys. Acta* **1498(2-3)**, 99-111 (2000).
7. Moy, K.A., Jiao, L., Freedman, N.D., *et al.* Soluble receptor for advanced glycation end products and risk of liver cancer. *Hepatology* **57(6)**, 2338-2345 (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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