**CEP-Lysine-d₄**  
*Item No. 9000595*

**Formal Name:** (S)-2-amino-6-(2-(2-carboxy-ethyl)-1H-pyrrol-1-yl)-hexanoic-2,2',3,3'-d₄-acid  
**MF:** C₁₃H₁₆D₄N₂O₄  
**FW:** 272.3  
**Chemical Purity:** ≥98%  
**Deuterium Incorporation:** ≥99% deuterated forms (d₁-d₄); ≤1% d₀  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid  
**UV/Vis:** λₘₓ: 217 nm

**Laboratory Procedures**

CEP-Lysine-d₄ contains four deuterium atoms at the hydroxyethyl 2, 2’, 3, and 3’ positions. It is intended for use as an internal standard for the quantification of CEP-lysine by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that CEP-Lysine-d₄ be stored as supplied at -20°C. It should be stable for at least two years. CEP-Lysine-d₄ is supplied as a crystalline solid. A stock solution may be made by dissolving the CEP-Lysine-d₄ in the solvent of choice. CEP-Lysine-d₄ is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of CEP-lysine-d₄ in these solvents is approximately 20 mg/ml.

CEP-Lysine-d₄ is used as an internal standard for the quantification of CEP-lysine 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).

Docosahexaenoic acid (DHA) is an ω-3 polyunsaturated fatty acid that is abundant in the brain and in photoreceptor cell membranes in the retina. Oxidative cleavage of phospholipids containing DHA produces reactive electrophilic phospholipid fragments, including 4-hydroxy-7-oxohept-5-enoates. These can interact with the primary amine group of lysyl residues to produce 2-(ω-carboxyethyl)pyrrole (CEP) derivatives, which are abundant in certain diseases.

Advanced glycation end products, including CEP-lysine are biomarkers for age-related macular degeneration.

**References**


**Related Products**

For a list of related products please visit: [www.caymanchem.com/catalog/9000595](http://www.caymanchem.com/catalog/9000595)

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**CAUTION:** This product is for laboratory research only; not for administration to humans. Not for human or veterinary diagnostic or therapeutic use.

**SAFETY DATA**

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallowed, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent or email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**

Cayman Chemical Company makes no warranty or guarantee of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extend beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

The limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer’s exclusive remedy and Cayman’s sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman’s option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.