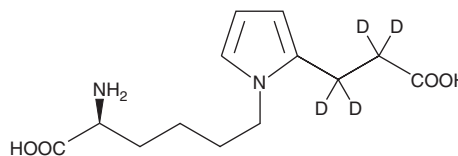


# PRODUCT INFORMATION



## CEP-Lysine-d<sub>4</sub> Item No. 9000595

**CAS Registry No.:** 2702446-72-6  
**Formal Name:** (S)-2-amino-6-(2-(2-carboxy-ethyl)-1H-pyrrol-1-yl)-hexanoic-2,2',3,3'-d<sub>4</sub>-acid  
**MF:** C<sub>13</sub>H<sub>16</sub>D<sub>4</sub>N<sub>2</sub>O<sub>4</sub>  
**FW:** 272.3  
**Chemical Purity:** ≥98% (CEP-Lysine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**UV/Vis.:** λ<sub>max</sub>: 217 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

CEP-lysine-d<sub>4</sub> is intended for use as an internal standard for the quantification of CEP-lysine 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).

CEP-lysine-d<sub>4</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the CEP-lysine-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. CEP-lysine-d<sub>4</sub> is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of CEP-lysine-d<sub>4</sub> in these solvents is approximately 20 mg/ml.

### Description

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.<sup>1</sup> 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.<sup>2,3</sup> Advanced glycation end products, including CEP-lysine are biomarkers for age-related macular degeneration.<sup>4,5</sup> CEP-lysine-d<sub>4</sub> is a deuterated form of CEP-lysine.

### References

1. Lu, L., Gu, X., Hong, L., *et al.* Synthesis and structural characterization of carboxyethylpyrrole-modified proteins: Mediators of age-related macular degeneration. *Bioorg. Med. Chem.* **17**(21), 7548-7561 (2009).
2. Gu, X., Sun, M., Gugiu, B., *et al.* Oxidatively truncated docosahexaenoate phospholipids: Total synthesis, generation, and peptide adduction chemistry. *J. Org. Chem.* **68**(10), 3749-3761 (2003).
3. Crabb, J.W., Miyagi, M., Gu, X., *et al.* Drusen proteome analysis: An approach to the etiology of age-related macular degeneration. *Proc. Natl. Acad. Sci. USA* **99**(23), 14682-14687 (2002).
4. Gu, J., Pauer, G.J.T., Yue, X., *et al.* Assessing susceptibility to age-related macular degeneration with proteomic and genomic biomarkers. *Mol. Cell. Proteomics* **8**(6), 1338-1349 (2009).
5. Ni, J., Yuan, X., Gu, J., *et al.* Plasma protein pentosidine and carboxymethyllysine, biomarkers for age-related macular degeneration. *Mol. Cell. Proteomics* **8**(8), 1921-1933 (2009).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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