

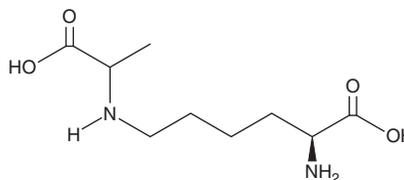
# PRODUCT INFORMATION



## N<sup>ε</sup>-(1-Carboxyethyl)-L-lysine

Item No. 25333

CAS Registry No.: 5746-03-2  
Formal Name: N<sup>ε</sup>-(1-carboxyethyl)-L-lysine  
Synonym: CEL  
MF: C<sub>9</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>  
FW: 218.3  
Purity: ≥95% (mixture of diastereomers)  
Supplied as: A 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

N<sup>ε</sup>-(1-Carboxyethyl)-L-lysine (CEL) is supplied as a solid. A stock solution may be made by dissolving the CEL in water. CEL is slightly soluble in water. We do not recommend storing the aqueous solution for more than one day.

### Description

CEL is an advanced glycation end product (AGE) produced by the reaction of methyl glyoxal with lysine residues in proteins.<sup>1</sup> Protein bound, but not free, CEL binds to the receptor for AGEs (RAGE).<sup>2</sup> CEL levels are elevated in the lens of diabetic patients with cataract.<sup>3</sup> Long-term caloric restriction decreases CEL levels in rat heart mitochondria.<sup>4</sup> It decreases glutamate uptake and secretion of S100B in rat hippocampal slices in a RAGE-independent manner when used at a concentration of 1 mM.<sup>5</sup>

### References

1. Ahmed, M.U., Brinkmann, F.E., Degenhardt, T.P., *et al.* N<sup>ε</sup>-(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).
2. Xue, J., Ray, R., Singer, D., *et al.* The receptor for advanced glycation end products (RAGE) specifically recognizes methylglyoxal-derived AGEs. *Biochemistry* **53**(20), 3327-3335 (2014).
3. Hashim, Z. and Zarina, S. Advanced glycation end products in diabetic and non-diabetic human subjects suffering from cataract. *Age (Dordr)* **33**(3), 377-384 (2011).
4. Pamplona, R., Portero-Otín, M., Bellmunt, M.J., *et al.* Aging increases N<sup>ε</sup>-(carboxymethyl)lysine and caloric restriction decreases N<sup>ε</sup>-(carboxyethyl)lysine and N<sup>ε</sup>-(malondialdehyde)lysine in rat heart mitochondrial proteins. *Free Radic. Res.* **36**(1), 47-54 (2002).
5. Hansen, F.K., Battú, C.E., Dutra, M.F., *et al.* Methylglyoxal and carboxyethyllysine reduce glutamate uptake and S100B secretion in the hippocampus independently of RAGE activation. *Amino Acids* **48**(2), 375-385 (2016).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/12/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM