

# PRODUCT INFORMATION



## Colivelin

Item No. 24239

CAS Registry No.: 867021-83-8

Formal Name: L-seryl-L-alanyl-L-leucyl-L-leucyl-L-arginyl-L-seryl-L-isoleucyl-L-prolyl-L-alanyl-L-prolyl-L-alanyl-glycyl-L-alanyl-L-seryl-L-arginyl-L-leucyl-L-leucyl-L-leucyl-L-leucyl-L-threonylglycyl-L- $\alpha$ -glutamyl-L-isoleucyl-L- $\alpha$ -aspartyl-L-leucyl-L-proline



MF:  $C_{119}H_{206}N_{32}O_{35}$

FW: 2,645.1

Purity:  $\geq 95\%$

Supplied as: A crystalline solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 4$  years

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

### Laboratory Procedures

Colivelin is supplied as a crystalline solid. A stock solution may be made by dissolving the colivelin in the solvent of choice, which should be purged with an inert gas. Colivelin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of colivelin in these solvents is approximately 20 and 1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of colivelin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of colivelin in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Colivelin is a potent synthetic peptide activator of STAT3 that has neuroprotective activity.<sup>1,2</sup> It protects approximately 50 and 100% of mouse primary cortical neurons from cell death induced by amyloid  $\beta$  (1-43) ( $A\beta_{43}$ ) when used at concentrations of 10 and 100 fM, respectively.<sup>1</sup> Colivelin protects against cell death induced by V642I-APP in a CaM kinase IV (CaMKIV) and STAT3-dependent manner. It increases STAT3 phosphorylation *in vitro* and *in vivo*, an effect that correlates with improvements in working memory.<sup>2</sup> Colivelin (10 pmol every six days) rescues deficits in spatial working memory in a mouse model of Alzheimer's disease induced by intracerebroventricular injection of  $A\beta_{25-35}$ . It also improves motor performance and prolongs survival in a mouse model of amyotrophic lateral sclerosis (ALS).<sup>3</sup>

### References

1. Chiba, T., Yamada, M., Hashimoto, Y., *et al.* Development of a femtomolar-acting humanin derivative named colivelin by attaching activity-dependent neurotrophic factor to its N terminus: Characterization of colivelin-mediated neuroprotection against Alzheimer's disease-relevant insults *in vitro* and *in vivo*. *J. Neurosci.* **25(44)**, 10252-10261 (2005).
2. Yamada, M., Chiba, T., Sasabe, J., *et al.* Nasal Colivelin treatment ameliorates memory impairment related to Alzheimer's disease. *Neuropsychopharmacology* **33(8)**, 2020-2032 (2008).
3. Chiba, T., Yamada, M., Sasabe, J., *et al.* Colivelin prolongs survival of an ALS model mouse. *Biochem. Biophys. Res. Commun.* **343(3)**, 793-798 (2006).

#### 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, 12/08/2022

#### 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