
Product Data Sheet

Product Name: Cecropin A

Cat. No.: GC31773

Chemical Properties

Cas. No. 80451-04-3

SMILES Lys-Trp-Lys-Leu-Phe-Lys-Lys-Ile-Glu-Lys-Val-Gly-Gln-Asn-Ile-Arg-Asp-Gly-Ile-Ile-Lys-Ala-Gly-Pro-Ala-Val-Ala-Val-Val-Gly-Gln-Ala-Thr-Gln-Ile-Ala-Lys-NH₂Formula C₁₈₄H₃₁₃N₅₃O₄₆ M.Wt 4003.78

Solubility Water : ≥ 50 mg/mL (12.14 mM) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Cell experiment:**

Briefly, 5 × 10⁵ cells/mL in RPMI 1640 supplemented with 10% heat-inactivated FCS are placed onto 96-well plates. Cecropin A is added to cell cultures at a final concentration of 10, 20, 30, 40 and 50 μM and cells are incubated for 24 h at 37°C in a humidified atmosphere with 5% CO₂. Then, 20 μL MTT (0.5 mg/mL) is added to each well and the plate is incubated for 4 h at 37°C. The MTT solution is removed and isopropyl alcohol containing 0.04 N hydrochloric acid is added to each well to dissolve the formazan crystal. Absorbance is determined on a spectrophotometric microplate reader at a test wavelength of 550 nm and a reference wavelength of 620 nm. The absorbance of the cells incubated in the absence of cecropin A (untreated cells) is set at 100%. Results are expressed as percentage of cell viability[1].

Caution: Product has not been fully validated for medical applications. For research use only.

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References:

[1]. Cerón JM, et al. The antimicrobial peptide cecropin A induces caspase-independent cell death in human promyelocytic leukemia cells. *Peptides*. 2010 Aug;31(8):1494-503.

[2]. Lee E, et al. Anti-inflammatory activities of cecropin A and its mechanism of action. *Arch Insect Biochem Physiol*. 2015 Jan;88(1):31-44.

Background

Cecropin A is an antimicrobial peptide that has been found in *H. cecropia*.^{1,2} It induces apoptosis in *C. albicans* when used at a concentration of 5 μ M.² Cecropin A is active against the planktonic and uropathogenic *E. coli* strain CFT073 (MIC = 100 μ g/ml) and increases survival of CFT073-infected *G. mellonella* larvae.¹ Cecropin A (15 mg/kg)

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decreases enrichment of the gut microflora *Bacteroidaceae* and *Enterobacteriaceae* and increases gut levels of *Lactobacillus*, as well as increases survival and decreases body weight loss in a mouse model of inflammatory bowel disease (IBD) induced by dextran sulfate .³

1.Kalsy, M., Tonk, M., Hardt, M., et al.The insect antimicrobial peptide cecropin A disrupts uropathogenic *Escherichia coli* biofilmsNPJ Biofilms Microbiomes6(1)6(2020) 2.Yun, J., and Lee, D.G.Cecropin A-induced apoptosis is regulated by ion balance and glutathione antioxidant system in *Candida albicans*IUBMB Life68(8)652-662(2016) 3.Zhai, Z., Zhang, F., Cao, R., et al.Cecropin A alleviates inflammation through modulating the gut microbiota of C57BL/6 mice with DSS-induced IBDFront. Microbiol.101595(2019)

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