

Cecropin A

Cat. No.:	HY-P1539
CAS No.:	80451-04-3
Molecular Formula:	C ₁₈₄ H ₃₁₃ N ₅₃ O ₄₆
Molecular Weight:	4003.78
Sequence:	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-NH ₂
Sequence Shortening:	KWKLFKKIEKVGQNIRDGIIKAGPAVAVVGQATQIAK-NH ₂
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the COA.

BIOLOGICAL ACTIVITY

Description	Cecropin A is a linear 37-residue antimicrobial polypeptide, with anticancer and anti-inflammatory activity.
IC ₅₀ & Target	Bacterial ^[2]
In Vitro	Cecropin A shows anticancer activity. Cecropin A (10-50 μM) dose-dependently reduces the viability of HL-60 cells. Cecropin A (30 μM) promotes ROS production, causes mitochondrial membrane potential (Δψ _m) collapse, and generates morphological changes in nuclear chromatin in HL-60 cells. Cecropin A (30 μM) also leads to an early apoptosis and causes caspase-independent cell death in HL-60 cells ^[1] . Cecropin A has cytotoxicity on gram negative bacteria, including <i>A. baumannii</i> (CCARM 12005, CCARM 12035, CCARM 12036, CCARM 12037) with minimal inhibitory concentration (MIC) of 0.5-1 μM. Cecropin A (25 μM) significantly blocks the expression of mTNF-α, mIL-1β, and mMIP-2 mRNA and slightly inhibited the expression of mMIP-1 mRNA in RAW264.7 cells. Cecropin A (0.1, 0.25, 0.5, 1, 2.5, 5 μM) also inhibits NO production and reduces mTNF-α cytokine levels in LPS-stimulated RAW264.7 cells, and exhibits anti-inflammatory activity ^[2] .

PROTOCOL

Cell Assay ^[1]	Briefly, 5 × 10 ⁵ 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% CO ₂ . 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] . MCE has not independently confirmed the accuracy of these methods. They are for reference 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.

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

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