

Cecropin P1, porcine acetate

Cat. No.:	HY-P2317A
Molecular Formula:	C ₁₄₉ H ₂₅₇ N ₄₅ O ₄₅
Molecular Weight:	3398.91
Sequence Shortening:	SWLSKTAKKLENSAKKRISSEGIAIAIQGGPR
Target:	Bacterial; Endogenous Metabolite
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Cecropin P1, porcine acetate is an antibacterial peptide that can be isolated from the upper part of the small intestine of the pig. Cecropin P1, porcine acetate shows antibacterial activity against Gram-negative bacteria. Cecropin P1, porcine acetate shows antiviral activity and inhibits PRRSV infection ^{[1][2]} .																
In Vitro	<p>Cecropin P1, porcine (0-480 µg/mL, 36-96 h) markedly inhibits CH-1a infection and replication in Marc-145 cells^[2]. Cecropin P1, porcine (0-480 µg/mL, 36 h) not only displays extracellular virucidal activity against PRRSV (porcine reproductive and respiratory syndrome virus), but also exerts a potent inhibitory effect when added either before, simultaneously with, or after viral inoculation^[2].</p> <p>Cecropin P1, porcine (480 µg/mL, 0-72 h) blocks CH-1a-induced apoptosis during the late phase of infection^[2]. Cecropin P1, porcine (0-480 µg/mL, 0-4 h) inhibits viral particle release^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Marc-145 cells</td> </tr> <tr> <td>Concentration:</td> <td>160, 320, and 480 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>36, 48, 72, 96 h</td> </tr> <tr> <td>Result:</td> <td>Significantly inhibited viral infection in a dose-dependent manner at 36 h postinfection. Inhibited CH-1a infection in Marc-145 cells with a 50% effective concentration (EC₅₀) of 112 µg/mL. The 50% cytotoxic concentration (CC₅₀) of Cecropin P1 for Marc-145 cells was estimated to be 719 µg/mL.</td> </tr> </table> <p>Western Blot Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Marc-145 cells</td> </tr> <tr> <td>Concentration:</td> <td>160, 320, and 480 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>36 h</td> </tr> <tr> <td>Result:</td> <td>Significantly reduced the expression of the viral N protein when administered with either the pre-, co-, or posttreatment method.</td> </tr> </table>	Cell Line:	Marc-145 cells	Concentration:	160, 320, and 480 µg/mL	Incubation Time:	36, 48, 72, 96 h	Result:	Significantly inhibited viral infection in a dose-dependent manner at 36 h postinfection. Inhibited CH-1a infection in Marc-145 cells with a 50% effective concentration (EC ₅₀) of 112 µg/mL. The 50% cytotoxic concentration (CC ₅₀) of Cecropin P1 for Marc-145 cells was estimated to be 719 µg/mL.	Cell Line:	Marc-145 cells	Concentration:	160, 320, and 480 µg/mL	Incubation Time:	36 h	Result:	Significantly reduced the expression of the viral N protein when administered with either the pre-, co-, or posttreatment method.
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In Vivo

Cecropin P1 (1 mg/kg, IP, once) prevents bacterial growth, endotoxemia, and mortality in rats with septic shock^[3].
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REFERENCES

- [1]. Giacometti A, et al. Effect of mono-dose intraperitoneal cecropins in experimental septic shock. Crit Care Med. 2001 Sep;29(9):1666-9.
- [2]. Jiang R, et al. Expression of antimicrobial peptide Cecropin P1 in *Saccharomyces cerevisiae* and its antibacterial, antiviral activity in vitro. Electronic Journal of Biotechnology, 2020.
- [3]. Andersson M, et al. *Ascaris* nematodes from pig and human make three antibacterial peptides: isolation of cecropin P1 and two ASABF peptides. Cell Mol Life Sci. 2003 Mar;60(3):599-606.
- [4]. Guo C, et al. Cecropin P1 inhibits porcine reproductive and respiratory syndrome virus by blocking attachment. BMC Microbiol. 2014 Nov 18;14:273.
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Caution: Product has not been fully validated for medical applications. For research use only.

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