Revision 1

Store at -20C

#90826

# Apicidin

1 mg

Cell Signaling TECHNOLOGY®

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## Background

Apicidin is a fungal metabolite, broad-spectrum antiprotozoal agent. This small molecule inhibits histone deacetylases (HDACs), known to moderate histone acetylation and chromatin folding during gene expression (1,2). Apicidin has been shown to irreversibly prevent the development of intracellular Apicomplexan parasites *in vitro* through HDAC inhibition ($IC_{50}$ = 0.7 nM) (1). Research indicates that Apicidin inhibits tumor cell proliferation through gene expression changes of p21WAF1/Cip1 and gelsolin, and can cause cell cycle arrest in the G1 phase (2). Apicidin also decreases HIF-1α protein levels in human and mouse cell lines (3). HDAC2 has been recognized as a host immune response to the influenza A virus and several other viruses, making HDAC inhibitors important compounds to study in relation to viral diseases (4,5).

## Molecular Formula

$C_{34}H_{49}N_5O_6$

## Molecular Weight

623.8 g/mol

## Purity

>98%

## CAS

183506-66-3

## Solubility

Soluble in DMSO at 10 mg/ml or ethanol at 1 mg/ml.

## Storage

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

## Directions for Use

Apicidin is supplied as a lyophilized powder. For a 2 mM stock, reconstitute 1 mg of powder in 801 µl of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

## Background References

1. Darkin-Rattray, S.J. et al. (1996) *Proc Natl Acad Sci U S A* 93, 13143-7.
2. Han, J.W. et al. (2000) *Cancer Res* 60, 6068-74.
3. Kim, S.H. et al. (2007) *Oncol Rep* 17, 647-51.
4. Nagesh, P.T. et al. (2017) *Front Microbiol* 8, 1315.
5. Walters, M.S. et al. (2009) *J Virol* 83, 11502-13.

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