Revision 4

Store at -20C

#12520

Vorinostat (SAHA)

5 mg

Cell Signaling TECHNOLOGY®

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Background

Vorinostat (SAHA) is a histone deacetylase (HDAC) inhibitor that acts by binding to and blocking the active site of the enzyme (1). Both class I and class II HDACs are inhibited by vorinostat at nanomolar concentrations (1-3). Research studies have shown that vorinostat causes the accumulation of acetylated histones, certain transcription factors, and other nonhistone proteins, which regulate gene expression and protein function. This leads to cell cycle arrest, differentiation, and/or apoptosis in many transformed cell types treated with micromolar concentrations of vorinostat (1,4-7).

Molecular Formula

$C_{14}H_{20}N_2O_3$

Molecular Weight

264.32 g/mol

Purity

>99%

CAS

149647-78-9

Solubility

Soluble in DMSO at 66mg/ml and EtOH at 2mg/ml.

Storage

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

Directions for Use

Vorinostat is supplied as a lyophilized powder. For a 20 mM stock, reconstitute the 5 mg in 945.8 µl DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 1-10 µM for 2-24 hr. Soluble in DMSO at 66 mg/ml; soluble in ethanol at 2 mg/ml with slight warming; very poorly soluble in water with maximum solubility ~20-50 µM.

Background References

1. Marks, P.A. and Breslow, R. (2007) *Nat Biotechnol* 25, 84-90.
2. Richon, V.M. et al. (1998) *Proc Natl Acad Sci U S A* 95, 3003-7.
3. Moradei, O. et al. (2005) *Curr Med Chem Anticancer Agents* 5, 529-60.
4. Kim, M.J. et al. (2012) *Anticancer Res* 32, 3161-8.
5. Richon, V.M. et al. (2000) *Proc Natl Acad Sci U S A* 97, 10014-9.
6. Butler, L.M. et al. (2000) *Cancer Res* 60, 5165-70.
7. Lee, J.H. et al. (2010) *Proc Natl Acad Sci U S A* 107, 14639-44.

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