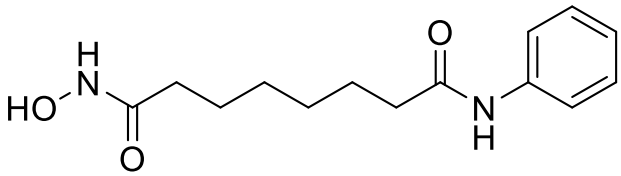
Product data sheet

MedKoo Cat#: 100940 Name: Vorinostat CAS#: 149647-78-9 Chemical Formula: $C_{14}H_{20}N_2O_3$ Exact Mass: 264.14739 Molecular Weight: 264.3202	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Vorinostat, also known as suberanilohydroxamic acid, MK-0683 and SAHA, is a potent and selective inhibitor of histone deacetylases (HDACs). Vorinostat has been shown to bind to the active site of histone deacetylases and act as a chelator for Zinc ions also found in the active site of histone deacetylases. Vorinostat's inhibition of histone deacetylases results in the accumulation of acetylated histones and acetylated proteins, including transcription factors crucial for the expression of genes needed to induce cell differentiation. Vorinostat was approved for the treatment of cutaneous T cell lymphoma (CTCL) when the disease persists, gets worse, or comes back during or after treatment with other medicines.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100.0	378.33

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.78 mL	18.92 mL	37.83 mL
5 mM	0.76 mL	3.78 mL	7.57 mL
10 mM	0.38 mL	1.89 mL	3.78 mL
50 mM	0.08 mL	0.38 mL	0.76 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Hrzenjak A, Moinfar F, Kremser ML, Strohmeier B, Petru E, Zatloukal K, Denk H. Histone deacetylase inhibitor vorinostat suppresses the growth of uterine sarcomas in vitro and in vivo. Mol Cancer. 2010 Mar 4;9:49. doi: 10.1186/1476-4598-9-49. PMID: 20202195; PMCID: PMC2843655.

2. Lautz TB, Jie C, Clark S, Naiditch JA, Jafari N, Qiu YY, Zheng X, Chu F, Madonna MB. The effect of vorinostat on the development of resistance to doxorubicin in neuroblastoma. PLoS One. 2012;7(7):e40816. doi: 10.1371/journal.pone.0040816. Epub 2012 Jul 19. PMID: 22829886; PMCID: PMC3400660.

In vivo study

1. Hrzenjak A, Moinfar F, Kremser ML, Strohmeier B, Petru E, Zatloukal K, Denk H. Histone deacetylase inhibitor vorinostat suppresses the growth of uterine sarcomas in vitro and in vivo. Mol Cancer. 2010 Mar 4;9:49. doi: 10.1186/1476-4598-9-49. PMID: 20202195; PMCID: PMC2843655.

2. More SS, Itsara M, Yang X, Geier EG, Tadano MK, Seo Y, Vanbrocklin HF, Weiss WA, Mueller S, Haas-Kogan DA, Dubois SG, Matthay KK, Giacomini KM. Vorinostat increases expression of functional norepinephrine transporter in neuroblastoma in vitro and in vivo model systems. Clin Cancer Res. 2011 Apr 15;17(8):2339-49. doi: 10.1158/1078-0432.CCR-10-2949. Epub 2011 Mar 18. PMID: 21421857; PMCID: PMC3247296.

7. Bioactivity

Biological target:

Vorinostat (SAHA) is a potent and orally active pan-inhibitor of HDAC1, HDAC2 and HDAC3 (Class I), HDAC7 (Class II) and HDAC11 (Class IV), with ID50 values of 10 nM and 20 nM for HDAC1 and HDAC3, respectively.

In vitro activity

Vorinostat efficiently suppressed MES-SA cell growth at a low dosage (3 microM) already after 24 hours treatment. Decrease of cell survival was even more pronounced after prolonged treatment and reached 9% and 2% after 48 and 72 hours of treatment, respectively. Colony forming capability of MES-SA cells treated with 3 microM vorinostat for 24 and 48 hours was significantly diminished and blocked after 72 hours. HDACs class I (HDAC2 and 3) as well as class II (HDAC7) were preferentially affected by this treatment. Vorinostat significantly increased p21(WAF1) expression and apoptosis.

Reference: Mol Cancer. 2010 Mar 4;9:49. https://pubmed.ncbi.nlm.nih.gov/20202195/

In vivo activity

Nude mice injected with 5 x 106 MES-SA cells were treated for 21 days with vorinostat (50 mg/kg/day) and, in comparison to placebo group, a tumor growth reduction of more than 50% was observed. Results obtained by light- and electron-microscopy suggested pronounced activation of apoptosis in tumors isolated from vorinostat-treated mice.

Reference: Mol Cancer. 2010 Mar 4;9:49. https://pubmed.ncbi.nlm.nih.gov/20202195/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.