

## Product Information

### Trichostatin A

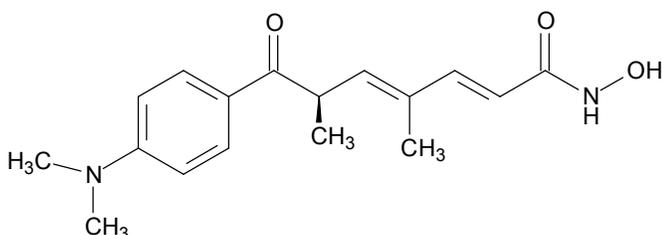
from *Streptomyces* sp.

Catalog Number **T8552**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

CAS RN 58880-19-6

Synonyms: TSA, *R*-(*E,E*)]-7-[4-(Dimethylamino)phenyl]-*N*-hydroxy-4,6-dimethyl-7-oxo-2,4-heptadienamido



### Product Description

Molecular formula:  $\text{C}_{17}\text{H}_{22}\text{N}_2\text{O}_3$

Molecular weight: 302.37

Trichostatin A inhibits histone deacetylase at nanomolar concentrations. The resulting histone hyperacetylation leads to chromatin relaxation and modulation of gene expression. Therefore, this compound may be involved in cell cycle progression of several cell types, inducing cell growth arrest at both G and G/M phases, and in some cases, it may induce apoptosis.<sup>1-3</sup> Trichostatin A causes induction of Friend leukemia cell differentiation<sup>4</sup> and up-regulates the gene expression of low density lipoprotein receptors.<sup>5</sup> It was found to prevent embryonic stem cell differentiation.<sup>6</sup>

Crystallographic studies indicate this histone deacetylase inhibitor, along with suberoylanilide hydroxamic acid, fits into the catalytic site of the enzyme, which has a tubular structure with a zinc ion at its base. The hydroxamic acid moiety binds to the zinc.<sup>7</sup>

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Preparation Instructions

Trichostatin A is soluble in DMSO, DMF, acetonitrile, and ethanol. It is not soluble in water. This product is tested at 2 mg/ml in methanol, yielding a clear, colorless solution. It is also soluble in lower alcohols, sparingly soluble in chloroform, ethyl acetate, acetone, and benzene.<sup>8</sup>

### Storage/Stability

Store the product desiccated at  $-20\text{ }^{\circ}\text{C}$ . Under these conditions the product is stable for 3 years.

Solutions in DMSO can be aliquoted and frozen at  $-20\text{ }^{\circ}\text{C}$ . Under these conditions, and at a concentration of 2 mg/ml, the solutions are stable, as determined by HPLC.

### References

1. Minucci, S. et al., Proc. Natl. Acad. Sci., USA, **94**, 11295-11300 (1997).
2. Medina, V. et al., Cancer Res., **57**, 3697-3707 (1997).
3. Taylor, S.J., BMC Cell Biol., **5**, 5-17 (2004).
4. Yoshida, M. et al., J. Antibiot., **43**, 1101-6 (1990).
5. Koguchi Y. et al., J. Antibiot., **50**, 970 (1997).
6. Lee J.H. et al., Genesis, **38**, 32-38 (2004).
7. Marks, P.A. et al., Curr. Opin. Oncol., **13**, 477-483 (2001).
8. Merck Index, 12th ed., No. 9781, 1645 (1996).

EM,NDH,PHC,MAM 10/13-1