

## Product Specification Sheet

**Product Name:** Trichostatin A (TSA)

**Catalog Number:** C8742

**Technical information:**

Chemical Formula:  $C_{17}H_{22}N_2O_3$

CAS #: 58880-19-6

Molecular Weight: 302.37

Purity: > 98%

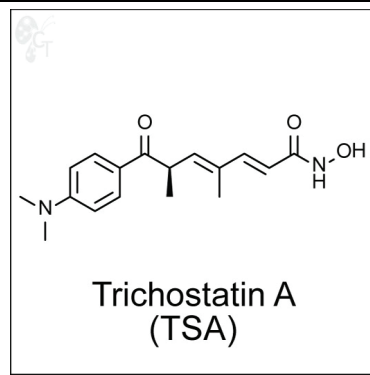
Appearance: Brown solid

Solubility: Soluble in DMSO up to 50 mM

Chemical Name: (R,2E,4E)-6-(4-(dimethylamino)benzoyl)-N-hydroxy-4-methylhepta-2,4-dienamide

Storage: For longer shelf life, store solid powder or DMSO solution at -20°C desiccated.

Shelf Life: In the unopened package, powder is stable for 1 year and DMSO solution is stable for 6 months under proper storage condition.



**Handling:** • To make 10 mM stock solution, add 0.331mL of DMSO for each mg of Trichostatin A (TSA).

- For DMSO solution, briefly spin the vial at 500 rpm in a 50 mL conical tube to ensure maximum sample recovery.

**Biological Activity:** Trichostatin A (TSA) is a potent histone deacetylase (HDAC) inhibitor. It inhibits HDAC 1, 2, 3, 6, 10, 11 at IC50s of less than 10 nM, with over 300-fold selectivity against class IIa HDACs.[1] TSA affects DNA replication and gene expression by inhibiting HDAC activity and therefore altering the histone modifications and access of DNA inside chromatin.

Trichostatin A induces apoptosis and cell growth arrest at both G and G/M phases. As HDACs are overexpressed in many cancer types, TSA is widely used to probe the tumorigenesis mechanism targeting HDAC.[2] Trichostatin A was found to prevent the differentiation of embryonic stem cell,[3] while TSA treatment increased functional characteristics of human ESC/iPSC-derived cardiomyocytes.[4]

- Reference:**
1. Lobera M, et al. Selective class IIa histone deacetylase inhibition via a nonchelating zinc-binding group. *Nat Chem Biol.* 2013; 9(5):319-25. Pubmed ID: 23524983
  2. Timmermann S, et al. Histone acetylation and disease. *Cell Mol Life Sci.* 2001; 58(5-6):728-36. Review Pubmed ID: 11437234
  3. Lee JH, et al. Histone deacetylase activity is required for embryonic stem cell differentiation. *Genesis.* 2004; 38(1):32-8. Pubmed ID: 14755802
  4. Otsuji TG, et al. Dynamic link between histone H3 acetylation and an increase in the functional characteristics of human ESC/iPSC-derived cardiomyocytes. *PLoS One.* 2012; 7(9):e45010 Pubmed ID: 22984602

To reorder: <http://www.cellagentech.com/Trichostatin-A-TSA/>

For Technical Support: [technical@cellagentech.com](mailto:technical@cellagentech.com)

*Chemicals are sold for research use only, not for clinical or diagnostic use.*