PRODUCT INFORMATION

Content:
Trichostatin A is supplied as a powder and is available in 2 pack sizes.
- **met-tsa-1**: 1 mg
- **met-tsa-5**: 5 mg

Storage and stability:
- Trichostatin A is shipped at room temperature. Store at -20°C.
- Upon resuspension, prepare aliquots of Trichostatin A and store at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Quality control
- Purity: ≥90% (UHPLC)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

Trichostatin A (TSA), an antifungal antibiotic produced by *Streptomyces hygroscopicus*¹, is a potent and specific inhibitor of histone deacetylases (HDACs), which are overexpressed in various cancers and closely correlate with oncogenic factors. Trichostatin A is active at nanomolar concentrations in mammalian cells. By suppressing the activity of HDACs, it leads to increased histone acetylation, thereby causing highly acetylated histones to accumulate in the cell². This in turn induces enhanced expression of specific genes that elicit extensive cellular morphologic and metabolic changes such as growth arrest, differentiation and apoptosis. At submicromolar concentrations Trichostatin A has been shown to induce apoptosis in diverse cancer cells while exhibiting very low toxicity to normal cells. Interestingly, HDACs epigenetically silence transcription of the autophagy-related genes Atg and LC3. Thus, HDAC inhibitors like Trichostatin A and SAHA can lead to augmented levels of Atg and LC3 proteins and consequently, promote autophagy.


CHEMICAL PROPERTIES

**CAS number:** 58880-19-6  
**Formula:** C₁₇H₂₂N₂O₃  
**Molecular weight:** 302.37  
**Solubility:** DMSO (2 mg/ml)  
**Structure:**

![Chemical Structure](image)

**Working concentration:** 30-600 ng/ml (0.1-2 μM)

PROTOCOLS

For reference only; as described in the indicated publications.

**Cell Culture Assay**³
**Cells:** Human colorectal cancer cell lines HCT116 and HT-29  
**Working concentration:** 30 ng/ml (0.1 μM)  
**Incubation time:** 24 h  
**Method:** Cell proliferation (MTT assay)

**Cell Culture Assay**³
**Cells:** Human malignant glioma cells lines LNT-229 and LN-308  
**Working concentration:** 600 ng/ml (2 μM)  
**Incubation time:** 24 h  
**Method:** Viability and cell growth assays (crystal violet and trypan blue staining)

RELATED PRODUCTS

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<tr>
<th>Product</th>
<th>Description</th>
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<td>5-Aza-2'-deoxycytidine</td>
<td>DNA methyltransferase inhibitor</td>
<td>met-ade-1</td>
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<tr>
<td>Leptomycin B</td>
<td>Nuclear export inhibitor</td>
<td>trl-lep</td>
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<tr>
<td>SAHA</td>
<td>Pan-HDAC inhibitor</td>
<td>inh-saha</td>
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TECHNICAL SUPPORT

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