Trichostatin A
Histone Deacetylase Inhibitor
Catalog code: met-tsa-1
https://www.invivogen.com/trichostatin-a

For research use only
Version 19A15-MM

PRODUCT INFORMATION

Contents
1 mg of Trichostatin A

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. Resuspended product is stable 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, 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 cell. 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.

4. Höring E. et al., 2013. The histone deacetylase inhibitor trichostatin A promotes apoptosis and antitumor immunity in glioblastoma cells.

CHEMICAL PROPERTIES

CAS number: 58880-19-6
Formula: C_{17}H_{22}N_{2}O_{3}
Molecular weight: 302.37
Solubility: DMSO (2 mg/ml)

METHODS

Preparation of 2 mg/ml stock solution
1. Add 500 µl of DMSO to 1 mg Trichostatin A. Mix by vortexing.
2. Use immediately or prepare aliquots and store at 20°C.
3. Prepare further dilutions using sterile, endotoxin-free water or aqueous buffers.

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

PROTOCOLS

For reference only; as described in the indicated publications.

Cell Culture Assay
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
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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