Tranylcypromine . hemisulfate

Dual LSD1 and MAO inhibitor

Tranylcypromine . hemisulfate is a non-selective, irreversible monoamine oxidase inhibitor (MAOI), primarily used in research related to neuropsychiatric disorders. It is also a potent inhibitor of lysine-specific demethylase 1 (LSD1/KDM1A), with an IC_{50} < 2 μM.

Key features and applications include:

- **Dual Enzyme Inhibition:** Irreversibly inhibits LSD1 (a histone demethylase) and MAO-A/B, impacting both epigenetic regulation and neurotransmitter metabolism.
- **Epigenetic Modulation:** Modulates gene expression by inhibiting LSD1, altering histone methylation patterns critical for chromatin remodeling and transcriptional regulation.
- **Stem Cell Research:** Maintains pluripotency, enhance chemical reprogramming efficiency, and direct differentiation - particularly into insulin-producing β-cells - making it valuable for regenerative medicine and disease modeling.
- **Neurobiology & Behavior:** As a non-selective MAOI, tranylcypromine hemisulfate is used to study monoaminergic signaling pathways involved in mood regulation, cognition, and neuropsychiatric disorders.

Research Applications:

- Epigenetic and transcriptional regulation studies
- Neural progenitor cell proliferation and differentiation
- Cancer biology, particularly in studies involving histone modification and gene expression regulation
- Stem cell reprogramming and differentiation protocols

Relevant disease states include:

- **Major Depressive Disorder (MDD):** Particularly effective in treatment-resistant or atypical depression, where other antidepressants have failed.

- **Acute Myeloid Leukemia (AML):** LSD1 is critical for maintaining the undifferentiated state of leukemic cells. Inhibition by tranylcypromine promotes differentiation and reduces proliferation.
- **Small Cell Lung Cancer (SCLC):** LSD1 inhibition has shown promise in preclinical models of SCLC, where it affects neuroendocrine differentiation and tumor growth.
- **Prostate and Breast Cancer:** LSD1 is implicated in hormone receptor signaling and epigenetic regulation in these cancers.
- **Neurodegenerative Disorders:** Due to its MAOI activity, tranylcypromine is also being explored in models of Parkinson's disease and Alzheimer's disease, where monoamine regulation is disrupted.

Ordering Information

Order Online »

ENZ-CHM365-0250	250mg

Manuals, SDS & CofA

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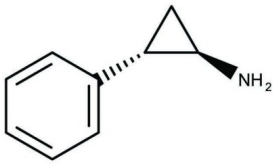

1/2 H_2SO_4

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	trans-(±)-2-Phenylcyclopropylamine hemisulfate
Appearance	White solid.
CAS	13492-01-8
Couple Target	Demethylase
Couple Type	Inhibitor
Formula	$C_9H_{11}N$. 1/2 H_2SO_4
Identity	Determined by NMR.
MW	182.23
Purity	≥98% (TLC)
Solubility	Soluble in water (up to 25 mg/mL).

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ENZO LIFE SCIENCES, INC.
Phone: 800.942.0430
info-usa@enzolifesciences.com

European Sales Office
ENZO LIFE SCIENCES (ELS) AG
Phone: +41 61 926 8989
info-eu@enzolifesciences.com

Belgium, The Netherlands & Luxembourg
Phone: +32 3 466 0420
info-be@enzolifesciences.com

France
Phone: +33 472 440 655
info-fr@enzolifesciences.com

Germany
Phone: +49 7621 5500 526
info-de@enzolifesciences.com

UK & Ireland
Phone (UK customers): 0845 601 1488
Phone: +44 1392 825900
info-uk@enzolifesciences.com