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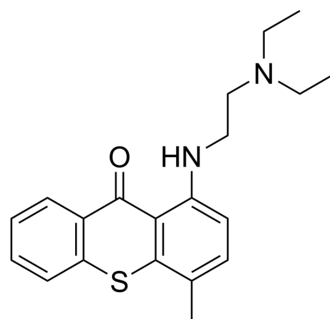
# Product Data Sheet

Inhibitors • Screening Libraries • Proteins

## Lucanthone

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|---|---|
| **Cat. No.:** | HY-B2098 |
| **CAS No.:** | 479-50-5 |
| **Molecular Formula:** | $C_{20}H_{24}N_2OS$ |
| **Molecular Weight:** | 340.48 |
| **Target:** | Autophagy; Parasite |
| **Pathway:** | Autophagy; Anti-infection |
| **Storage:** | Powder -20°C 3 years; 4°C 2 years<br>In solvent -80°C 2 years; -20°C 1 year |

## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 25 mg/mL (73.43 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Concentration \ Solvent \ Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.9370 mL | 14.6852 mL | 29.3703 mL |
| 5 mM | 0.5874 mL | 2.9370 mL | 5.8741 mL |
| 10 mM | 0.2937 mL | 1.4685 mL | 2.9370 mL |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

Lucanthone is an endonuclease inhibitor of Apurinic endonuclease-1 (APE-1).

**$IC_{50}$ & Target**

APE-1[1]

**In Vitro**

Lucanthone is a novel inhibitor of autophagy that induces cathepsin D-mediated apoptosis. To investigate the anticancer activity of Lucanthone, cell viability is measured by MTT assay. Lucanthone reduces cell viability to a similar extent in a panel of seven breast cancer cell lines. In addition, a direct comparison reveals that Lucanthone is significantly more potent than Chloroquine (CQ) at reducing breast cancer cell viability with a mean $IC_{50}$ of 7.2 μM versus 66 μM for CQ. Measurement of cell viability in two representative cell lines (MDA-MB-231 and BT-20) by ATPlite assay and trypan blue exclusion reveals comparable results[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

| | |
|---|---|
| **Cell Assay** [2] | Cell viability is assessed by MTT assay. Cells are seeded into 96-well microculture plates at 10,000 cells per well and allowed to attach for 24 h. Cells are then treated with Lucanthone (0, 0.5, 1, 5, 10, 20 and 40 μM), Chloroquine, Vorinostat, or combinations for 72 h. Following drug treatment, MTT is added and cell viability is quantified using a BioTek microplate reader. Effects on cell viability are also determined by measuring ATP levels using the ATPlite assay system and by trypan blue exclusion. Pro-apoptotic effects following in vitro drug exposure are quantified by propidium iodide (PI) staining and fluorescence-activated cell sorting (FACS) analysis of sub-$G_0$/$G_1$ DNA content[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES


[1]. Chowdhury SM, et al. Graphene nanoribbons as a drug delivery agent for lucanthone mediated therapy of glioblastoma multiforme. Nanomedicine. 2015 Jan;11(1):109-18.

[2]. Carew JS, et al. Lucanthone is a novel inhibitor of autophagy that induces cathepsin D-mediated apoptosis. J Biol Chem. 2011 Feb 25;286(8):6602-13.


**Caution: Product has not been fully validated for medical applications. For research use only.**


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