Product Datasheet

ME-344

Catalog No. **BP-01218** · CAS **1374524-68-1** · Form **free base** · Physical state **solid** · Color **white to off-white** · Version **1.0** · Revision **2026-09-04**

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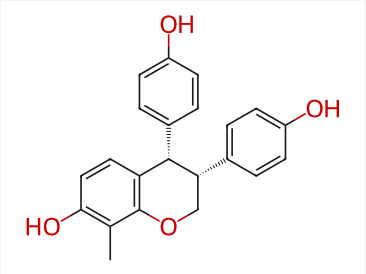
Target	Research area
Heme Oxygenase (HO); Reactive Oxygen Species (ROS); Mitochondrial Metabolism; Microtubule/Tubulin; Caspase; Apoptosis	**Cancer**

Molecular formula	$C_{22}H_{20}O_4$
Molecular weight	**348.3918**

STRUCTURE



DESCRIPTION

ME-344 is a mitochondrial Heme oxygenase 1 (HO-1) inhibitor. ME-344 specifically binds and alters HO-1 structure, and increases HO-1 translocation from the rough endoplasmic reticulum to mitochondria, but only in drug-sensitive cells (such as H460 and SHP-77 cells). ME-344 decreases mitochondrial ATP production and induces ROS, with subsequent disruption of redox homeostasis and mitochondrial function. ME-344 has significant antitumor activity, and can be used for cancers like breast cancer research .

BIOLOGICAL ACTIVITY

In Vitro

ME-344 (24 h) induces apoptosis in sensitive H460 and SHP-77 human lung cancer cells via activation of Caspase 3 and subsequent cleavage of PARP.

ME-344 (10-10000 nM; 72 h) is cytotoxic to NB4, U937, K562, OCI-AML2, KG1a, HL-60, and TEX leukemia cell lines with IC50 values ranging from 70 to 260 nM after 72 h of treatment.

ME-344 (10 μM) potently inhibits tubulin polymerization in a cell-free biochemical assay.

ME-344 (8 h) suppresses the de novo purine biosynthesis pathway in MV4-11 AML cells after 8 h of treatment, significantly reducing levels of AICAR and IMP.

In Vivo

ME-344 (50-100 mg/kg; i.p.; every other day; 11 days) produces dose-dependent anti-tumor efficacy in a leukemia xenograft mouse model.

SOLUBILITY

soluble in DMSO

REFERENCES

[1]. Zhang L, et al. Isoflavone ME-344 Disrupts Redox Homeostasis and Mitochondrial Function by Targeting Heme Oxygenase 1. Cancer Res. 2019;79(16):4072-4085.

[2]. Jeyaraju DV, et al. A novel isoflavone, ME-344, targets the cytoskeleton in acute myeloid leukemia. Oncotarget. 2016;7(31):49777-49785.

[3]. Quintela-Fandino M, et al. Randomized Phase 0/I Trial of the Mitochondrial Inhibitor ME-344 or Placebo Added to Bevacizumab in Early HER2-Negative Breast Cancer. Clin Cancer Res. 2020;26(1):35-45.

[4]. Hurrish K H, et al. A novel isoflavone, ME-344, enhances venetoclax antileukemic activity against AML via suppression of oxidative phosphorylation and purine biosynthesis[J]. Blood, 2021, 138: 2238.

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