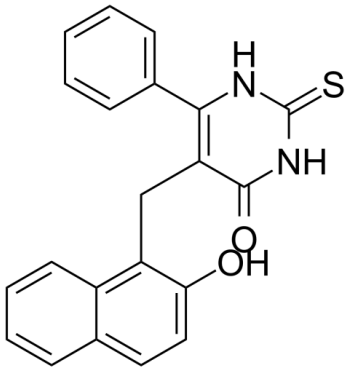
Data Sheet

Product Name:	Cambinol
Cat. No.:	CS-6945
CAS No.:	14513-15-6
Molecular Formula:	$C_{21}H_{16}N_2O_2S$
Molecular Weight:	360.43
Target:	Apoptosis; Phospholipase; Sirtuin
Pathway:	Apoptosis; Cell Cycle/DNA Damage; Epigenetics; Metabolic Enzyme/Protease
Solubility:	DMSO : 50 mg/mL (138.72 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Cambinol is a **SIRT1** and **SIRT2** inhibitor with **IC_{50}** values of 56 μM and 59 μM, respectively. Cambinol is a potent brain penetrant **neutral sphingomyelinase (N-SMase)** inhibitor (exosome inhibitor)[1][2]. IC50 & Target: IC50: 56 μM (SIRT1), 59 μM (SIRT2)[1] **In Vitro:** Cambinol inhibits NAD-dependent deacetylase activity of human SIRT1 and SIRT2. Inhibition of SIRT1 activity with cambinol during genotoxic stress leads to hyperacetylation of key stress response proteins and promotes cell cycle arrest. Treatment of BCL6-expressing Burkitt lymphoma cells with cambinol as a single agent induces apoptosis, which is accompanied by hyperacetylation of BCL6 and p53. Cambinol has only weak inhibitory activity against SIRT5 (42% inhibition at 300 μM) and no activity against SIRT3[1]. **In Vivo:** Cambinol is well tolerated in mice (100 mg/kg) and inhibits growth of Burkitt lymphoma xenografts. No significant weight loss occurs in cambinol-treated animals relative to controls. Inhibitors of NAD-dependent deacetylases may constitute novel anticancer agents[1].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Cambinol is prepared in DMSO.[1].The reporter construct with or without varying amounts of GAL4-BCL6 expression plasmid are introduced into NCI-H460 cells using calcium phosphate method. A plasmid containing cytomegalovirus (CMV)-driven β-galactosidase reporter (50 ng) is cotransfected to control for transfection efficiency. Sixteen hours after transfection, cells are treated with 100 μM cambinol of DMSO (control) for 24 hours and the luciferase and β-galactosidase activity is measured[1]. **Animal Administration:** Cambinol is prepared as 10%/10% ethanol/Cremophore solution.[1]Mice: Cambinolat the dose of 100 mg/kg, or vehicle are administered i.v. through tail vein injection or i.p. daily from day 5 to 19 (five injections per week). The dose of 100 mg/kg cambinol is the highest dose that could be administered as a single i.v. injection due to limited solubility of the drug. Tumor size is measured thrice a week using caliper and the tumor volumes are calculated[1].

References:

[1]. Heltweg B, et al. Antitumor activity of a small-molecule inhibitor of human silent information regulator 2 enzymes. Cancer Res. 2006 Apr 15;66(8):4368-77.

[2]. Huarui Zhang, et al. Advances in the discovery of exosome inhibitors in cancer. J Enzyme Inhib Med Chem. 2020 Dec;35(1):1322-1330.

CAIndexNames:

4(1H)-Pyrimidinone, 2,3-dihydro-5-[(2-hydroxy-1-naphthalenyl)methyl]-6-phenyl-2-thioxo-

SMILES:

O=C(C(CC1=C2C=CC=CC2=CC=C1O)=C(C3=CC=CC=C3)N4)NC4=S

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