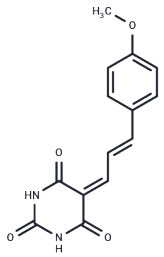
Data Sheet (Cat.No.T3594)

TargetMol

ML346

Chemical Properties



CAS No. : 100872-83-1

Formula: C14H12N2O4

Molecular Weight: 272.26

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	ML346 is a novel activator of Hsp70.
Targets(IC50)	HSP
In vitro	ML346 has good chemical stability, significantly high water solubility, is not reactive with excess glutathione, and is cell permeable. The probe ML346 will help elucidate roles for activation of Hsp70 and HSF-1 in the prevention and progression of cancers, cellular aging, and metabolic and neurodegenerative disorders. ML346 is a novel modulator of proteostasis for protein conformational diseases.
In vivo	ML346 activates transcription of the Hsp70 promoter and suppresses aggregation of poly-glutamines in a C. elegans model, suggesting the probe has efficacy in modifying protein aggregation and associated toxicity. ML346 induces HSF-1-dependent chaperone expression and restores protein folding in conformational disease models.
Kinase Assay	Assays (25.5 μL volume) are carried out robotically at room temperature (21°C) and are linear with respect to time and enzyme concentration under the conditions used. Assays are performed for 30 min using Multidrop Micro reagent dispensers in a 96-well format. The concentration of magnesium acetate in the assays is 10 mM and [γ-33P]ATP (800 c.p.m./pmol) is used at 5, 20 or 50 μM as indicated, in order to be at or below the Kmfor ATP for each enzyme.The assays are initiated with MgATP, stopped by the addition of 5 μL of 0.5 M orthophosphoric acid and spotted on to P81 filter plates using a unifilter harvester. The IC50 values of inhibitors are determined after carrying out assays at ten different concentrations of each compound[2].

Solubility Information

Solubility	DMSO: 27.78 mg/mL (102.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 2.78 mg/mL (10.21 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.78 mg/mL (10.21 mM),Suspension. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and*

In vivo Formulation	*used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.673 mL	18.3648 mL	36.7296 mL
5 mM	0.7346 mL	3.673 mL	7.3459 mL
10 mM	0.3673 mL	1.8365 mL	3.673 mL
50 mM	0.0735 mL	0.3673 mL	0.7346 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Calamini B,et al. ML346: A Novel Modulator of Proteostasis for Protein Conformational Diseases. National Center for Biotechnology Information (US); 2010-2012 Dec 17.
Yang X, Zhao X, Zhao Z, et al.Genome-wide analysis reveals transcriptional and translational changes during diapause of the Asian corn borer (Ostrinia furnacalis).BMC biology.2024, 22(1): 1-23.