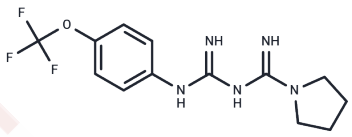
Data Sheet (Cat.No.T8532)

TargetMol

IM156

Chemical Properties



CAS No. : 1422365-93-2

Formula: C13H16F3N5O

Molecular Weight: 315.29

Storage: The compound is unstable in solution. Please use soon
Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	IM156 (HL156A; HL271 acetate) is a chemical derivative of Metformin. IM156 is a potent and orally active AMPK activator that increases AMPK phosphorylation. IM156 attenuates aging-associated cognitive impairment in animal model [1] [2]. IM156 is a potent oxidative phosphorylation (OXPHOS) inhibitor which is able to be used for the research of solid tumors [3].
Targets(IC50)	OXPHOS,Mitochondrial Metabolism
In vitro	IM156 (0.31-10 μM) phosphorylates AMPKα1 Thr172 in NIH3T3 mouse fibroblast cells in a dose- and time-dependent manner [1]. IM156 does not affect the expression of key factors involved in glucose homeostasis like glucose-6-phosphatase (G6pase) or phosphoenolpyruvate carboxykinase 1 (Pck1) [1]. Western Blot Analysis [1] Cell Line: NIH3T3 cells Concentration: 0.31 μM, 0.62 μM, 1.25 μM, 2.5 μM, 5 μM, 10 μM Incubation Time: 4 hours Result: Significantly increased the AMPK phosphorylation rate.
In vivo	IM156 does not affect metabolic regulation assessed by body weight, blood glucose, insulin levels and lipid metabolite content in mice with diet-induced obesity [1]. IM156 (50 mg/kg; for 2 months) does not affect body weight, general locomotion, or anxiety [2]. IM156 markedly attenuates the aging-induced decline in novel object recognition memory and spatial working memory [2]. IM156 markedly increases AMPK activation in the hippocampus of aged mice [2]. Animal Model: C57BL/6J mice (young group/12-16 weeks, old groups/20-22 months) [2] Dosage: 50 mg/kg Administration: Oral administration (drinking water), for 2 months Result: Attenuated age-related cognitive decline.

Solubility Information

Solubility	DMSO: 27.5 mg/mL (87.22 mM),The compound is unstable in solution. Please use soon. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2 mg/mL (6.34 mM),Sonication is recommended. *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	3.1717 mL	15.8584 mL	31.7168 mL
5 mM	0.6343 mL	3.1717 mL	6.3434 mL
10 mM	0.3172 mL	1.5858 mL	3.1717 mL
50 mM	0.0634 mL	0.3172 mL	0.6343 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

Son J , Cho Y W , Woo Y J , et al. Metabolic Reprogramming by the Excessive AMPK Activation Exacerbates Antigen-Specific Memory CD8 + T Cell Differentiation after Acute Lymphocytic Choriomeningitis Virus Infection[J]. Immune Network, 2019, 19(2).

Hoang N M, Liu Y, Bates P D, et al.Targeting DNMT3A-mediated oxidative phosphorylation to overcome ibrutinib resistance in mantle cell lymphoma.Cell Reports Medicine.2024

Said Izreig, Alexandra Gariepy, Irem Kaymak, et al. Repression of LKB1 by miR-1792 Sensitizes MYC-Dependent Lymphoma to Biguanide Treatment.Cell Rep Med. 2020 May 19;1(2):100014.