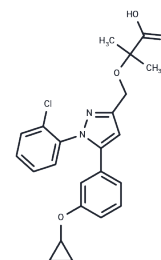


VB124

## Chemical Properties

CAS No. : 2230186-18-0  
 Formula: C<sub>23</sub>H<sub>23</sub>ClN<sub>2</sub>O<sub>4</sub>  
 Molecular Weight: 426.89  
 Storage: Store at low temperature  
 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	VB124 is an orally active, potent and selective MCT4 inhibitor. VB124 blocked lactate import (IC <sub>50</sub> value of 8.6 nM) and export (IC <sub>50</sub> value of 19 nM) in MDA-MB-231 cells. VB124 is selective for MCT4 over MCT1 and shows minimal MCT1 inhibitory activity in MCT1-expressing BT20 cells (IC <sub>50</sub> value of 24 μM).
Targets(IC <sub>50</sub> )	Monocarboxylate transporter
In vitro	VB124 blocks lactate import (IC <sub>50</sub> of 8.6 nM) and export (IC <sub>50</sub> of 19 nM) in MDA-MB-231 cells engineered to express MCT4 as the sole major plasma membrane lactate transporter; VB124 is selective for MCT4 over MCT1 and shows minimal MCT1 inhibitory activity in MCT1-expressing BT20 cells (IC <sub>50</sub> of 24 μM). [1]
In vivo	<b>METHODS:</b> Mice were treated with a supramaximal dose of VB124 (30 mg/kg twice daily for 180 days) and the effects on body, heart, liver, or lung weights were observed. <b>RESULTS</b> VB124 had no effect on body, heart, liver, or lung weights. <b>METHODS:</b> Osmotic minipumps were surgically implanted to continuously deliver ISO to induce hypertrophy in mice, and these mice were simultaneously treated with VB124 (30 mg/kg) by daily oral gavage for 4 weeks. We performed echocardiography on these mice at the end of 4 weeks and collected their hearts after sacrifice. <b>RESULTS</b> VB124 treatment ameliorated mitochondrial structural aberrations, and MCT4 inhibition reversed many of the pathological features of ISO-induced cardiac hypertrophy, including metabolic perturbations and mitochondrial structural damage. [1]

## Solubility Information

Solubility	DMSO: 125 mg/mL (292.82 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	2.3425 mL	11.7126 mL	23.4252 mL
5 mM	0.4685 mL	2.3425 mL	4.685 mL
10 mM	0.2343 mL	1.1713 mL	2.3425 mL
50 mM	0.0469 mL	0.2343 mL	0.4685 mL

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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

Cluntun AA, et al. The pyruvate-lactate axis modulates cardiac hypertrophy and heart failure. *Cell Metab.* 2021 Mar 2;33(3):629-648.

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