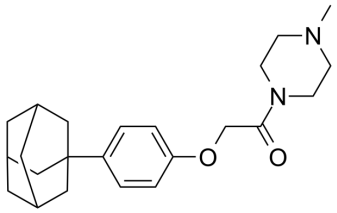
IDF-11774

Cat. No.:	HY-111387
CAS No.:	1429054-28-3
Molecular Formula:	$C_{23}H_{32}N_2O_2$
Molecular Weight:	368.51
Target:	HIF/HIF Prolyl-Hydroxylase
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 60 mg/mL (162.82 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7136 mL	13.5682 mL	27.1363 mL
5 mM	0.5427 mL	2.7136 mL	5.4273 mL
10 mM	0.2714 mL	1.3568 mL	2.7136 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.67 mg/mL (4.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (4.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (4.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

IDF-11774 is a novel hypoxia-inducible factor α (HIFα)-1 inhibitor with an IC_{50} of 3.65 μM.

IC_{50} & Target

IC50: 3.65 μM (HIF-1α)[1]

In Vitro

IDF-11774 is a novel hypoxia-inducible factor (HIF)-1 inhibitor with an IC_{50} of 3.65 μM in cancer cell line. IDF-11774 has been approved as a clinical candidate for a phase I study. Human umbilical vascular endothelial cells (HUVECs) treated with IDF-11774 show reduced capillary network formation on Matrigel. IDF-11774 treatment leads to reduced mRNA expression of

	GLUT1 and pyruvate dehydrogenase kinase 1 (PDK1). In addition, intracellular ATP levels are significantly reduced in the presence of IDF-11774 and are affected to a greater degree under low glucose conditions (5.5 mM)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Luciferase activity and HIF-1α accumulation are strongly suppressed in the tumors of mice treated by oral administration of IDF-11774, compare with the control. When IDF-11774 is orally administered daily for two weeks, significant dose-dependent tumor regression is observed in the mouse model[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Female Balb/c nude mice are used in this study. Cancer cells are injected subcutaneously into 4- to 6-week-old female Balb/c nude mice to generate tumors (5 mice per group). When the tumors grow to 100 mm^3, IDF-11774 is administered orally (per oral) or intravenously for 15 days. Tumor volumes (V) are determined using the following equation: V (mm^3)=(length×width×height)×0.5. Percentage tumor growth inhibition (%TGI) values are calculated for each treatment group versus the control[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cells. 2022, 11(15), 2350.
- J Cell Mol Med. 2021 Sep 14.
- J Immunol. 2021 Jun 11;ji2001026.
- Research Square Preprint. 2023 Jun 20.

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REFERENCES

[1]. Ban HS, et al. The novel hypoxia-inducible factor-1α inhibitor IDF-11774 regulates cancer metabolism, thereby suppressing tumor growth. Cell Death Dis. 2017 Jun 1;8(6):e2843.

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