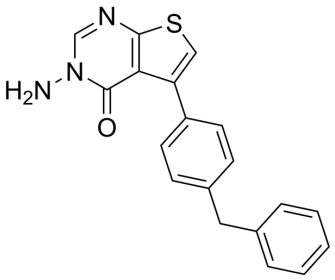
Barbadin

Cat. No.:	HY-119706
CAS No.:	356568-70-2
Molecular Formula:	$C_{19}H_{15}N_3OS$
Molecular Weight:	333.41
Target:	Apoptosis; Arrestin
Pathway:	Apoptosis; GPCR/G Protein
Storage:	Powder -20°C 3 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (149.97 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9993 mL	14.9966 mL	29.9931 mL
	5 mM	0.5999 mL	2.9993 mL	5.9986 mL
	10 mM	0.2999 mL	1.4997 mL	2.9993 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: ≥ 2.5 mg/mL (7.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Barbadin is a novel and selective β-arrestin/β2-adaptin interaction inhibitor, has IC_{50} values of 19.1 μM for β-arrestin1 and 15.6 μM for β-arrestin2. Barbadin blocks agonist-promoted endocytosis of the prototypical β2-adrenergic, V2-vasopressin and angiotensin-II type-1 receptors. Barbadin can induce apoptosis[1][2].

IC_{50} & Target

IC50: 19.1 μM (β-arrestin1); 15.6 μM (β-arrestin2)[1]

In Vitro

Barbadin (4 h) treatment reduces cell viability and induces apoptosis[2].
?Barbadin (2 h) treatment arrests breast cancer cells in G0/G1 phase[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[2]

Cell Line:	MDA MB-231 cells
Concentration:	
Incubation Time:	4 hours
Result:	Exhibited morphological characteristics of apoptosis including shrinkage, rounding and detachment, the percent of cell viability was reduced to 69.1% and apoptosis was developed in 29.9% of cells starved with EBSS (Earle's balanced salt solution).

Cell Cycle Analysis[2]

Cell Line:	MDA MB-231 cells
Concentration:	
Incubation Time:	2 hours
Result:	Arrested 63.7% of cells in G0/G1 phase.

CUSTOMER VALIDATION

- Circulation. 2022 Nov 30.
- Cell Chem Biol. 2021 Jun 9;S2451-9456(21)00265-8.
- Sci Signal. 2023 Apr 4;16(779):eabl4283.
- Front Pharmacol. 2021 Apr 22;12:625289.
- Biochim Biophys Acta Mol Cell Res. 2021 Sep 29;119144.

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REFERENCES

[1]. Thoria Donia, et al. β-Arrestin inhibition induces autophagy, apoptosis, G0/G1 cell cycle arrest in agonist-activated V2R receptor in breast cancer cells. Med Oncol. 2021 Mar 15;38(4):38.

[2]. Beautrait A, et al. A new inhibitor of the β-arrestin/AP2 endocytic complex reveals interplay between GPCR internalization and signalling. Nat Commun. 2017 Apr 18;8:15054. doi: 10.1038/ncomms15054.

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