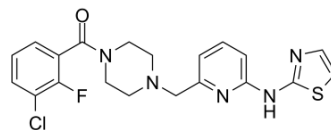


MK-8745

Cat. No.:	HY-13819		
CAS No.:	885325-71-3		
Molecular Formula:	C ₂₀ H ₁₉ ClFN ₅ OS		
Molecular Weight:	431.91		
Target:	Aurora Kinase; Apoptosis		
Pathway:	Cell Cycle/DNA Damage; Epigenetics; Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (231.53 mM)
 * "≥" means soluble, but saturation unknown.

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	2.3153 mL	11.5765 mL	23.1530 mL
5 mM	0.4631 mL	2.3153 mL	4.6306 mL
10 mM	0.2315 mL	1.1576 mL	2.3153 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (5.79 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (5.79 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (5.79 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MK-8745 is an aurora A kinase inhibitor with an IC₅₀ of 0.6 nM.

IC₅₀ & Target

Aurora A
 0.6 nM (IC₅₀)

In Vitro

MK-8745 induces apoptotic cell death in a p53-dependent manner when tested in vitro in cell lines of multiple lineages.

Exposure of p53 wild-type cells to MK-8745 results in the induction of p53 phosphorylation (ser15) and an increase in p53 protein expression^[1]. 1 μ M of MK-8745 exposure for 24 h induces cell cycle arrest in all NHL cells, with variable degrees of G2/M arrest. Z138C cells are highly sensitive to MK-8745 (1 μ M) treatment and induces an approximate 5.5-fold increase in the G2/M phase cell population by 96 h. MK-8745 treatment inhibits phosphorylation of Aurora-A in Granta 519 and Z138C cells, while Akata and JVM2 has no effect. MK-8745 specifically inhibits Aurora-A specific function. MK-8745 treatment leads to apoptotic cell death^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[2]

A total of 10000 cells are plated per well in a 96-well plate and treated with MK-8745 for varying time points starting 24 h after plating. Cell viability is measured by the MTT assay^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Transl Med. 2018 Jul 18;10(450):eaaq1093.
- Elife. 2020 Dec 7;9:e61405.
- J Cell Sci. 2019 Jul 1;132(13):jcs229385.
- bioRxiv. 2021 Feb 5.

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REFERENCES

[1]. Jayasree S Nair et al. The induction of polyploidy or apoptosis by the Aurora A kinase inhibitor MK8745 is p53-dependent.

[2]. Aparajita Chowdhury et al. A novel Aurora kinase A inhibitor MK-8745 predicts TPX2 as a therapeutic biomarker in non-Hodgkin lymphoma cell lines. Leuk Lymphoma, 2012 Mar, 53(3):462-71.

Caution: Product has not been fully validated for medical applications. For research use only.

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