TAME

Cat. No.: HY-13255

CAS No.: 901-47-3

Molecular Formula: $C_{14}H_{22}N_4O_4S$

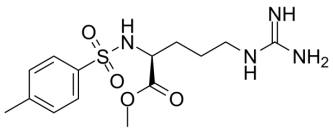
Molecular Weight: 342.41

Target: APC

Pathway: Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (292.05 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9205 mL	14.6024 mL	29.2048 mL
	5 mM	0.5841 mL	2.9205 mL	5.8410 mL
	10 mM	0.2920 mL	1.4602 mL	2.9205 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 (7.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

TAME is an inhibitor of anaphase-promoting complex/cyclosome (APC/C or APC), which binds to APC/C and prevents its activation by Cdc20 and Cdh1, produces mitotic arrest. TAME is not cell permeable[1][2].

IC_{50} & Target

Anaphase-promoting complex (APC)[1]

In Vitro

The absence of APC substrates, TAME ejects Cdc20 from the APC by promoting Cdc20 auto-ubiquitination in its N-terminal region. Cyclin B1 antagonizes TAME's effect by promoting binding of free Cdc20 to the APC and suppressing Cdc20 auto-ubiquitination[2].

TAME stabilizes cyclin B1 in Xenopus extract by two mechanisms. First, it reduces the k_{cat} of the APC^{Cdc20}/cyclin B1 complex without affecting the K_m, slowing the initial ubiquitination of unmodified cyclin B1. Second, as cyclin B1 becomes ubiquitinated, it loses its ability to promote Cdc20 binding to the APC in the presence of TAME. As a result, cyclin B1 ubiquitination terminates before reaching the threshold necessary for proteolysis[2].

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

REFERENCES

[1]. Zeng X, et al. Pharmacologic inhibition of the anaphase-promoting complex induces a spindle checkpoint-dependent mitotic arrest in the absence of spindle damage. Cancer Cell. 2010 Oct 19;18(4):382-95.

[2]. Zeng X, et al. An APC/C inhibitor stabilizes cyclin B1 by prematurely terminating ubiquitination. Nat Chem Biol. 2012 Feb 26;8(4):383-92.

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