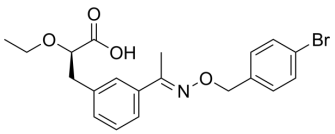
KS15

Cat. No.:	HY-115672
CAS No.:	1033781-20-2
Molecular Formula:	$C_{20}H_{22}BrNO_4$
Molecular Weight:	420.3
Target:	Cryptochrome
Pathway:	Metabolic Enzyme/Protease
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (237.93 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3793 mL	11.8963 mL	23.7925 mL
5 mM	0.4759 mL	2.3793 mL	4.7585 mL
10 mM	0.2379 mL	1.1896 mL	2.3793 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 (5.95 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (5.95 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.95 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

KS15 is an inhibitor of the interactions between cryptochromes (CRYs: CRY1 and CRY2) and the CLOCK:BMAL1 heterodimer. KS15 impairs the feedback actions of CRYs on E-box-dependent transcription (EC_{50}=4.9 μM) by CLOCK:BMAL1 heterodimer, an indispensable transcriptional regulator of the mammalian circadian clock. Anti-proliferative activity[1][2].

In Vitro

Applications? of? KS15? at? different concentrations? from? 1 μM to 10 μM restored the E-box-driven luciferase? activities? in? a? dose-dependent? manner, indicating that? KS15 evidently impairs the suppressive? actions? of? CRYs on CLOCK:BMAL1-induced? transcription.? KS15 inhibits the interactions between CRYs and BMAL1, resulting in the enhanced transcriptional activity in the core loop of? the molecular circadian? clock[1].

?KS15 directly binds to the C-terminal region of cryptochromes (CRYs: CRY1 and CRY2) and enhances E-box-mediated transcription[2].
?KS15 decreases the speed of cell growth and increased the chemosensitivity of MCF-7 cells to Doxorubicin and Tamoxifen. KS15 exerts an anti-proliferative effect and increases sensitivity to anti-tumor drugs in a specific type of breast cancer[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Research Square Preprint. 2023 Aug 10.

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REFERENCES

[1]. Chun SK, et al. A synthetic cryptochrome inhibitor induces anti-proliferative effects and increases chemosensitivity in human breast cancer cells. Biochem Biophys Res Commun. 2015;467(2):441-446.

[2]. Jang J, et al. The cryptochrome inhibitor KS15 enhances E-box-mediated transcription by disrupting the feedback action of a circadian transcription-repressor complex. Life Sci. 2018;200:49-55.

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