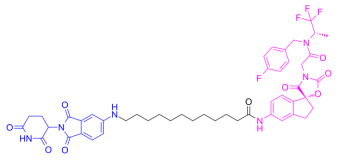
JQAD1

Cat. No.:	HY-145765
CAS No.:	2417097-18-6
Molecular Formula:	$C_{48}H_{52}F_4N_6O_9$
Molecular Weight:	932.95
Target:	Histone Acetyltransferase; Apoptosis; Caspase; PARP; PROTACs
Pathway:	Epigenetics; Apoptosis; Cell Cycle/DNA Damage; PROTAC
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 (107.19 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.0719 mL	5.3593 mL	10.7187 mL
	5 mM	0.2144 mL	1.0719 mL	2.1437 mL
	10 mM	0.1072 mL	0.5359 mL	1.0719 mL

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

BIOLOGICAL ACTIVITY

Description

JQAD1 is a CRBN-dependent PROTAC that selectively targets EP300 for degradation. JQAD1 suppresses EP300 expression and the H3K27ac modification. JQAD1 induces apoptosis. JQAD1 can be used in research of cancer[1].

In Vitro

JQAD1 suppresses EP300 expression, suppresses the H3K27ac modification, and induces apoptosis, marked by PARP1 cleavage in control Kelly NB cells, but not in CRBN-knockout cells[1].

JQAD1 (0.5 or 1 μM; 6-96 h) treatment resulted in early time-dependent induction of a sub-G1 peak, suggestive of apoptotic cell death in Kelly and NGP cells[1].

JQAD1 (1 μM; 12-36 h) induces Kelly NB cell apoptosis[1].

JQAD1 (0.5 μM; 24 h)-treated cells exhibits upregulation of the proapoptotic BH3-only effectors BIM, BID, and PUMA together with the proapoptotic mediator BAX and its inhibitors BCL2 and MCL1[1].

JQAD1 (0.5 and 1 μM; 24 h) disrupts MYCN expression[1].

JQAD1 (0.5 μM; 24 h) causes loss of H3K27ac at chromatin[1].

JQAD1 (1.2 nM-20 μM; 5 days) has broad CRBN-dependent antineoplastic activity across cancer cell lines[1].

JQAD1 induces EP300 degradation in a time-dependent manner as early as 16 hours[1].

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

Western Blot Analysis[1]

Cell Line:	MYCN-amplified NB cells
Concentration:	0.1, 0.5, 1, 3, 5, and 10 μM
Incubation Time:	24 h
Result:	Demonstrated a dose-dependent decrease in EP300 expression along with a parallel loss of the H3K27ac modification. Induced selective loss of EP300 expression coincident with cleavage of PARP1, signaling the onset of apoptosis.

Western Blot Analysis[1]

Cell Line:	Kelly NB cells
Concentration:	1 μM
Incubation Time:	12, 24, and 36 hours
Result:	Increased the expression of cleaved caspase-3 and cleaved PARP1 in a dose-dependent manner.

In Vivo

JQAD1 (40 mg/kg; i.p.; daily, for 21 d) inhibits tumor growth in NSG mice with Kelly NB cell xenografts[1].

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

Animal Model:	NSG mice with Kelly NB cell xenografts[1]
Dosage:	40 mg/kg
Administration:	Intraperitoneal injection; daily, for 21 days
Result:	Suppressed tumor growth and prolonged survival.

Animal Model:	CD1 mice[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection (Pharmacokinetic Analysis)
Result:	Had a half-life of 13.3 (±3.37 SD) hours in murine serum, with a C_{max} of 7 μmol/L.

REFERENCES

[1]. Durbin AD, et, al. EP300 Selectively Controls the Enhancer Landscape of MYCN-Amplified Neuroblastoma. Cancer Discov. 2022 Mar 1;12(3):730-751.

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