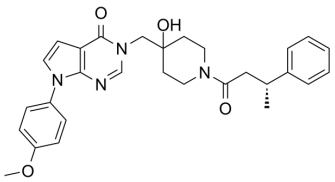
YCH2823

Cat. No.:	HY-158039
Molecular Formula:	$C_{29}H_{32}N_4O_4$
Molecular Weight:	500.59
Target:	Deubiquitinase; Apoptosis
Pathway:	Cell Cycle/DNA Damage; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	YCH2823 is an inhibitor of USP7 (IC_{50} = 49.6 nM; K_d = 0.117 μM). YCH2823 shows significant efficacy in inhibiting TP53 wild-type and mutant tumors, with approximately 5-fold higher potency than FT671. YCH2823 induce apoptosis. YCH2823 synergistic effects with mTOR inhibitors[1].
IC_{50} & Target	USP7 49.6 nM (IC_{50})

In Vitro

YCH2823 interacts directly with USP7 with high affinity and effectively inhibits its enzymatic activity. Potentially low toxicity to IMR-90 cells[1].

YCH2823 (0-10 μM; 72 h or 5 days) demonstrates significant dose-dependent inhibition of cell proliferation across different cancer cell lines. High sensitivity to TP53 wild-type, mutant. [1].

YCH2823 (0-1 μM; 1-48 h) affects protein stability and cell cycle regulation. It leads to decrease in MDM2 protein levels within 1 h and elevation of p53 and p21 levels in LNCaP cells. In MM.1S cells, although p53 protein levels do not change significantly, p21 levels are independently higher, indicating a possible p53-independent pathway for p21 induction.n the TP53 mutant Capan-1 resulted in a significant decrease in Rad18 and DNMT1 proteins, along with an increase in p21 levels[1] .

YCH2823 (0-1 μM; 6-48 h) causes up-regulation of BCL6 protein and mRNA. It induces apoptosis by increasing the proportion of cells in G1 phase in CHP212 cells and IMR-32 cells. The manipulations of DNMT1, p53, and p21 has no impact on the YCH2823-induced upregulation of BCL6[1].

YCH2823 with Rapamycin (HY-10219) or Ridaforolimus (HY-50908) results in a synergistic effect, where is more effective than either agent alone[1].

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

Apoptosis Analysis[1]

Cell Line:	CHP-212 cells
Concentration:	0, 0.03, 0.1, 0.3, 1 μM
Incubation Time:	48 h
Result:	Induced significant apoptosis, demonstrating YCH2823's capacity to induce programmed cell death.

Western Blot Analysis[1]

Cell Line:	CHP212 cells
Concentration:	0, 0.1, 0.3, 1 μM
Incubation Time:	6-48 h
Result:	YCH2823 led to a significant upregulation of BCL6 protein and mRNA, observable as early as 6 hours post-treatment and sustained over time. This suggests that YCH2823 may impact transcriptional regulation related to BCL6. Also led the decreases in Rad18 and DNMT1 suggesting effects on DNA repair mechanisms.

REFERENCES

[1]. Yong-Jun C et al. Identification of YCH2823 as a novel USP7 inhibitor for cancer therapy Elsevier Inc.. 2024 Apr 116071.

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