Product Datasheet

RP-1664

Catalog No. **BP-02172** · CAS **2980682-00-4** · Form **free base** · Physical state **other** · Color **White to off-white** · Version **1.0** · Revision **2026-09-04**

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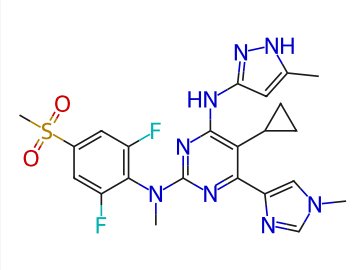
Target	Research area
Polo-like Kinase (PLK)	**Cancer**

Molecular formula	**$C_{23}H_{24}F_2N_8O_2S$**
Molecular weight	**514.5510**

STRUCTURE



DESCRIPTION

RP-1664 is a selective and orally active PLK4 inhibitor. RP-1664 drives potent synthetic lethality in TRIM37-high tumor models in vitro and in vivo. RP-1664 induces both centriole loss and amplification contribute to hypersensitivity of neuroblastoma cells.

BIOLOGICAL ACTIVITY

In Vitro

RP-1664 (1-1000 nM, 48-72 h) increases total PLK4 protein levels in RPE1-hTERT Cas9 TP53-null cells and increases p21 protein levels in RPE1-hTERT Cas9 TP53-WT cells dose dependently.

RP-1664 (0.001-10 μM) demonstrates a ~30-fold increase in sensitivity between TRIM37-normal/TP53-KO cells and TRIM37-overexpressing/TP53-WT cells, with intermediate sensitivity observed in TRIM37-high/TP53-KO and TRIM37-normal/TP53-WT cells.

RP-1664 (50-250 nM) induces centrosome loss at concentrations >100 nM in both p53-proficient and -deficient RPE1 cells as well as in three different NBL cell lines (CHP134, CHP212, SHSY5Y).

RP-1664 (50-250 nM) induces supernumerary centrosomes between 25-100 nM in both p53-proficient and -deficient RPE1 cells[1]. RP-1664 (0-2000 nM, 48 h) enhances cellular sensitivity to PLK4 inhibition and centrosome depletion in a manner dependent on high TRIM37 protein levels and functional p53.

RP-1664 (compound 37) shows an EC50 of 0.051 μM in reducing MCF7 cell viability.

In Vivo

RP-1664 (600 ppm, oral administration via feed, 7 days on/7 off or 14 days on/7 off or daily for 40 days) exhibits

dose-dependent anti-tumor activity in MCF7 xenograft mice.

RP-1664 (300 ppm, oral administration via feed, 17 days on/7 off for 40 days) elicits robust anti-tumor activity in NBL models through low-dose-induced centrosome amplification.

RP-1664 (compound 37) (6-21 mg/kg, i.g., twice a day, 35 days) shows dose responsive tumor growth inhibition, stasis and regressions in CAL-148 xenograft mice.

RP-1664 (300-600 ppm, oral administration via feed, 3 days on/4 off or 14 days on/7 off or daily for 55 days) inhibits tumor growth in CHP-134 xenograft mice.

SOLUBILITY

Soluble in DMSO

REFERENCES

[1]. Isabel Soria-Bretones, et al. A dual mechanism of sensitivity to PLK4 inhibition by RP-1664 in neuroblastoma. bioRxiv. February 17, 2025.

[2]. Vallée F, et al. Discovery of RP-1664: A First-in-Class Orally Bioavailable, Selective PLK4 Inhibitor. J Med Chem. 2025 Jun 12;68(11):10631-10647.