

Product Datasheet

Vps34-IN-1

Catalog No. **BP-01880** · CAS **1383716-33-3** · Form **free base** · Physical state **solid** · Color **white to off-white** · Version **1.0** · Revision **2026-09-07**

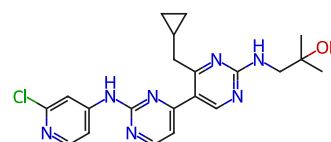
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Target PI3K; Autophagy	Research area Cancer
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Molecular formula **C₂₁H₂₄ClN₇O**

Molecular weight **425.9150**

STRUCTURE



DESCRIPTION

Vps34-IN-1 is a potent and selective inhibitor of class III Vps34 PI3K. Vps34-IN-1 inhibits phosphorylation of PtdIns by recombinant insect cell expressed Vps34-Vps15 complex with an IC₅₀ of ~25 nM. Vps34-IN-1 can suppress SGK3 activation by reducing PtdIns(3)P levels via lowering phosphorylation of T-loop and hydrophobic motifs. Vps34-IN-1 modulates autophagy .

BIOLOGICAL ACTIVITY

In Vitro Vps34-IN-1 does not significantly inhibit any of the lipid kinases including class I (p110α, p110β p110γ and p110δ) and all three members of the class II PI3Ks (PI3KC2α, PI3KC2β and PI3KC2γ) enzymes. Vps34-IN-1 (0.01, 0.1, 1 μM; for 1 h) inhibits PtdIns(3)P levels at endosomes in a dose-dependent manner[1]. Vps34-IN-1 (0.01, 0.1, 1 μM; for 1 h) induces a dose-dependent reduction in SGK3 activity that is maximally lowered by ~60% at 1 μM and ~40% at 0.1 μM. The suppression of SGK3 activity is accompanied by a commensurate decrease in T-loop and hydrophobic motif phosphorylation[1]. Vps34-IN-1 (1, 2, 4 μM; 24 h) induces a dose-dependent inhibition of SGK3 phosphorylation.

SOLUBILITY

Soluble in DMSO

REFERENCES

- [1]. Ruzica Bago, et al. Characterization of VPS34-IN1, a selective inhibitor of Vps34, reveals that the phosphatidylinositol 3-phosphate-binding SGK3 protein kinase is a downstream target of class III phosphoinositide 3-kinase. *Biochem J.* 2014 Nov 1;463(3):413-27.
- [2]. Fengchao Liu, et al. Prolonged inhibition of class I PI3K promotes liver cancer stem cell expansion by augmenting SGK3/GSK-3β/β-catenin signaling. *J Exp Clin Cancer Res.* 2018 Jun 25;37(1):122.

[3]. Limpert AS, et al. Autophagy in Cancer: Regulation by Small Molecules. Trends Pharmacol Sci. 2018 Dec;39(12):1021-1032

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