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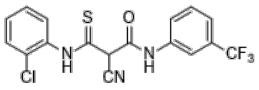
Data Sheet

Global Supplier of Chemical Probes, Inhibitors & Agonists.

Product Name	:	MKV3
Cat. No.	:	PC-26087
CAS No.	:	169120-56-3
Molecular Formula	:	$C_{17}H_{11}ClF_3N_3OS$
Molecular Weight	:	397.80
Target	:	Other Targets
Solubility	:	10 mM in DMSO



Biological Activity

MKV3 is a specific, first-in-class, broad spectrum inhibitor of Cu-transporting P-type ATPases targeting P1B-type copper ATPases, binds within the Cu+ entry pocket, thereby blocking Cu+ delivery to the intramembranous transport site, dependently decreases Cu+-stimulated ATPase activity with IC50 of 130 nM for Escherichia coli Cu+-ATPase CopA (EcCopA).
MKV3 shows dose-dependent binding to GFP-tagged human ATP7B and ATP7A with MST Kd of 69.5 nM and 219 nM respectively.
MKV3 shows no measurable effect on Zn2+-stimulated EcZntA ATPase activity.
MKV3 specifically inhibits EcCopA-mediated ATP hydrolysis and Cu+ transport, consistent with a direct blockade of the Cu+ entry pathway.
MKV3 inhibits ATP7A-dependent copper transport in mammals and zebrafish.
MKV3 impairs ATP7A-mediated copper delivery to two cuproenzymes, lysyl oxidase and tyrosinase, which receive copper from ATP7A within the secretory pathway in wild-type B16-F10 cells.
MKV3 suppresses melanogenesis in metastatic lung tumors in mouse model of metastatic B16-F10 melanoma.
MKV3 is a broad-spectrum inhibitor of Cu+-ATPases across bacteria, protozoa, fungi, plants, and animals.

References

Shanbhag VC, et al. bioRxiv [Preprint]. 2026 Jan 24:2026.01.22.700703.

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