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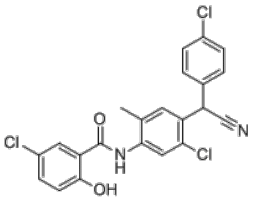
Data Sheet

Global Supplier of Chemical Probes, Inhibitors & Agonists.

Product Name	:	ZT-1a
Cat. No.	:	PC-72593
CAS No.	:	212135-62-1
Molecular Formula	:	$C_{22}H_{15}Cl_3N_2O_2$
Molecular Weight	:	445.73
Target	:	Other Targets
Solubility	:	10 mM in DMSO



Biological Activity

ZT-1a (STK39 inhibitor ZT-1a, SPAK-IN-ZT-1a) is a novel potent, selective **SPAK kinase (STK39)** inhibitor.
ZT-1a potently inhibited SLC12A cation-Cl-cotransporters (CCC), phosphorylation of NKCC1 p-Thr203/207/212 by 72% at 1uM and phosphorylation of KCC sites 1/2 by 65-77% at 3 uM in HEK-293 cells.
ZT-1a is a more potent modulator of SPAK-dependent CCC phosphorylation than the current SPAK kinase inhibitors Closantel, STOCK1S-50699, and STOCK1S-14279.
ZT-1a inhibited SPAK phosphorylation at Ser373 in HEK-293 cells (70% inhibition at 3-10 uM).
ZT-1a disrupts SPAK interaction with WNK but not with MO25α, reduces SPAK-dependent CCC phosphorylation in cells, inhibits NKCC1 but stimulates KCC3 activity.
ZT-1a decreases SPAK-CCC phosphorylation in hemorrhagic hydrocephalus, modulates primary cortical neuron volume, reduces stroke-associated cerebral edema and infarct, improves neurological function after ischemic stroke in vivo.

References

Jinwei Zhang, et al. ***Nat Commun.*** 2020 Jan 7;11(1):78.

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