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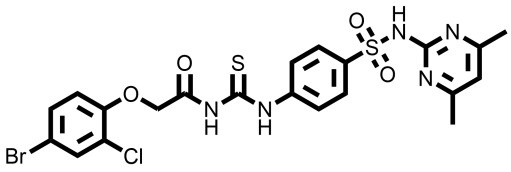
Cdc42 GTPase Inhibitor – ZCL278

Chemical Name: 2-(4-bromo-2-chlorophenoxy)-N-((4-(N-(4,6-dimethylpyrimidin-2-yl)sulfamoyl)phenyl)carbamothioyl)acetamide



Molecular Weight:	584.89
Formula:	$C_{21}H_{19}BrClN_5O_4S_2$
Purity:	≥98%
CAS#:	587841-73-4
Solubility:	DMSO up to 100 mM
Storage	Powder: 4 °C 1 year DMSO: 4 °C 3 months -20 °C 1 year

Biological Activity:

ZCL278 is a potent and selective inhibitor of Cdc42 GTPase. It directly binds to the binding site of the Cdc42 guanine nucleotide exchange factor intersectin (ITSN) and inhibits its functions (K_d~6-11 μM). In Swiss 3T3 fibroblast cultures, ZCL278 abolished microspike formation and disrupted GM130-docked Golgi structures, two of the most prominent Cdc42-mediated subcellular events. ZCL278 reduces the perinuclear accumulation of active Cdc42 in contrast to NSC23766, a selective Rac inhibitor. ZCL278 suppresses Cdc42-mediated neuronal branching and growth cone dynamics as well as actin-based motility and migration in a metastatic prostate cancer cell line (i.e., PC-3) without disrupting cell viability. ZCL278 could be a powerful chemical tool for research of Cdc42 subclass of Rho GTPases in human pathogenesis, such as those of cancer and neurological disorders.

How to Use:

In vitro: ZCL278 was used at 50 μM final concentration in various in vitro assays.

In vivo: not reported

Reference:

1. Friesland A, et al. Small molecule targeting Cdc42-intersectin interaction disrupts Golgi organization and suppresses cell motility. (2013) Proc Natl Acad Sci USA. 110(4):1261-6.