Product Data Sheet

Product Name: Tandutinib (MLN518) HCl
Cat. No.: GC12251

Chemical Properties

Cas. No.	N/A		
Chemical Name	N-(4-isopropoxyphenyl)-4-(6-methoxy-7-(3-(piperidin-1-yl)propoxy)quinazolin-4-yl)piperazine-1-carboxamide hydrochloride		
SMILES	O=C(NC(C=C1)=CC=C1OC(C)C)N2CCN(C(C3=C4)=NC=NC3=CC(OCCCN5CCCCC5)=C4OC)CC2.Cl		
Formula	$C_{31}H_{43}ClN_6O_4$	M.Wt	599.16
Solubility	≥ 59.9mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Tandutinib (MLN518) HCl		

Background

Tandutinib, also known as MLN518 or CT53518, is a potent antagonist for FLT3, platelet-derived growth factor receptor (PDGFR), and c-Kit [1].

FLT3 is expressed on the surface of many hematopoietic progenitor cells. Signalling of FLT3 is important for the normal development of haematopoietic stem cells and progenitor cells. High levels of wild-type FLT3 have been observed in some AML patients and may be associated with worse prognosis.

Tandutinib potently inhibited the activity of FLT3, PDGFR, and c-Kit with the IC50 value of ~200 nM. Tandutinib showed no significant effects on other tyrosine or serine/threonine kinases. In Ba/F3 cells expressing different FLT3-ITD mutants, Tandutinib inhibited IL-3-independent cell growth and FLT3-ITD autophosphorylation with an IC50 of 10–100 nM. In human FLT3-ITD-positive AML cell lines, Tandutinib induced apoptosis and inhibited FLT3-ITD phosphorylation, cellular proliferation, and signaling through the MAP kinase and PI3 kinase pathways [1]. Tandutinib inhibited phosphorylation of c-Kit, Akt, mTOR, and p70S6 kinase. Tandutinib significantly inhibited the proliferation and colony formation ability of colon cancer cell lines [2]. Tandutinib decreased the expression level of COX-2, VEGF, and interleukin-8. Intraperitoneal administration of tandutinib significantly suppressed growth of colon cancer tumor xenografts. Tandutinib inhibited the expression of cancer-promoting genes COX-2 and VEGF and suppressed the activation of Akt/mTOR signaling proteins in the xenograft tissues [2].

References:
[1] Kelly L M, Yu J C, Boulton C L, et al. CT53518, a novel selective FLT3 antagonist for the treatment of acute myelogenous leukemia (AML)[J]. Cancer cell, 2002, 1(5): 421-432.
[2] Ponnurangam S, Standing D, Rangarajan P, et al. Tandutinib inhibits the Akt/mTOR signaling pathway to inhibit colon cancer growth[J]. Molecular cancer therapeutics, 2013, 12(5): 598-609.

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