产品名称：**Tandutinib (MLN518)**
产品别名：坦度替尼

生物活性：			
Description	Tandutinib (MLN518) is a potent and selective inhibitor of the FLT3 with an IC_{50} of 0.22 μM, and also inhibits c-Kit and PDGFR with IC_{50}s of 0.17 μM and 0.20 μM, respectively. Tandutinib can be used to treat acute myelogenous leukemia (AML)[1][2]. Tandutinib has the ability to cross the blood-brain barrier[3].		
IC_{50} & Target [1]	PDGFR	FLT3	c-Kit
	0.2 μM (IC_{50})	0.22 μM (IC_{50})	0.17 μM (IC_{50})

In Vitro	Tandutinib (0-3 μM; 30 minutes; Ba/F3 cells) treatment inhibits IL-3-independent cell growth and FLT3-ITD autophosphorylation with an IC_{50} of 10-100 nM in Ba/F3 cells expressing different FLT3-ITD mutants[1]. Tandutinib (1 μM; 24-96 hours; Molm-14 and THP-1 AML cells) treatment induces apoptosis in FLT3-ITD-positive AML cells[1]. In human FLT3-ITD-positive AML cell lines, Tandutinib inhibits FLT3-ITD phosphorylation (IC_{50} of ~30 nM). As with Erk2, a constitutively high level of Akt phosphorylation is readily detected and is efficiently blocked by pretreatment of the Molm-14 cells with 100-300 nM Tandutinib[1]. Tandutinib inhibits cell proliferation of the FLT3-ITD-positive Molm-13 and Molm-14 with an IC_{50} of 10 nM. And signaling through the MAP kinase and PI3 kinase pathways[1].	
	Apoptosis Analysis[1]	
	Cell Line:	Molm-14 and THP-1 AML cells
	Concentration:	1 μM
	Incubation Time:	24 hours, 48 hours, 72 hours, 96 hours
	Result:	Induced apoptosis in FLT3-ITD-positive AML cells.
	Western Blot Analysis[1]	
	Cell Line:	Ba/F3 cells
	Concentration:	0 μM, 0.003 μM, 0.01 μM, 0.03 μM, 0.1 μM, 1 μM and 3 μM
	Incubation Time:	30 minutes
	Result:	In Ba/F3 cells expressing different FLT3-ITD mutants, inhibited IL-3-independent cell growth and FLT3-ITD autophosphorylation.
In Vivo	Tandutinib (60 mg/kg; oral gavage; daily; for 35 days; athymic nude mice) treatment causes a statistically significant increase in survival that was extended on average by 20 days[1].	
	Animal Model:	Athymic nude mice injected with Ba/F3 cells[1]
	Dosage:	60 mg/kg
	Administration:	Oral gavage; daily; for 35 days
	Result:	Caused a statistically significant increase in survival that was extended on average by 20 days.

In Vitro:

DMSO : 50 mg/mL (88.86 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	**1 mg**	**5 mg**	**10 mg**
	1 mM	1.7771 mL	8.8857 mL	17.7715 mL
	5 mM	0.3554 mL	1.7771 mL	3.5543 mL
	10 mM	0.1777 mL	0.8886 mL	1.7771 mL

Solvent&Solubility	*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。 储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。 -80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。 ***In Vivo:*** 请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 **In Vitro** 方式配制澄清的储备液，再依次添加助溶剂： ——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶 1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline Solubility: ≥ 2.5 mg/mL (4.44 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.44 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (4.44 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.44 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (4.44 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.44 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Kelly LM, et al. CT53518, a novel selective FLT3 antagonist for the treatment of acute myelogenous leukemia (AML). Cancer Cell, 2002, 1(5), 421-432. [2]. Griswold IJ, et al. Effects of MLN518, a dual FLT3 and KIT inhibitor, on normal and malignant hematopoiesis. Blood, 2004, 104(9), 2912-2918. [3]. Yang JJ, et al. P-glycoprotein and breast cancer resistance protein affect disposition of tandutinib, a tyrosine kinase inhibitor. Drug Metab Lett. 2010 Dec;4(4):201-12.