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产品名称：ML216
产品别名：CID-49852229

生物活性：

Description	ML216 (CID-49852229) is a potent, selective and cell permeable inhibitor of the DNA unwinding activity of BLM helicase with IC_{50}s of 2.98 μM and 0.97 μM for $BLM^{full\text{-}length}$ and $BLM^{636\text{-}1298}$, respectively. ML216 inhibits ssDNA-dependent ATPase activity of BLM with a K_i of 1.76 μM. Antitumor avtivity[1][2].
IC50 & Target	IC50: 2.98 μM ($BLM^{full\text{-}length}$) and 0.97 μM ($BLM^{636\text{-}1298}$)[1]
In Vitro	ML216 (12.5-50 μM; 24-72 hours; PSNG5 and PSNG13cells) treatment inhibits the proliferation of PSNF5 cells in a concentration-dependent manner, but not of PSNG13 cells[1]. ML216 treatment leads to a statistically significant increase in the frequency of sister chromatid exchanges (SCEs) in PSNF5 cells, but not in PSNG13 cells[1]. ML216 increases the sensitivity of PSNF5 cells to aphidicolin but has no sensitizing effect on isogenic PSNG13 cells devoid of BLM[1]. ML216 inhibits both the full length WRN (IC_{50} of 5 μM) and a truncated $WRN^{500\text{-}946}$ (IC_{50} of 12.6 μM), with the former being 2.5-fold more sensitive to inhibition. BLM is a little more sensitive than WRN to inhibition by ML216 (1.7-fold based on IC_{50} values). Despite the detectable inhibition of WRN by ML216, this compound appears selective for BLM in human cells. ML216 inhibits proliferation of WRN^+ and WRN^- cells equally well, and similarly sensitized both cell types to aphidicolin[1].

Cell Proliferation Assay[1]

Cell Line:	PSNG5 and PSNG13cells
Concentration:	12.5 μM or 50 μM
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Inhibited the proliferation of PSNF5 cells, but not of PSNG13 cells, and did so in a concentration-dependent manner.

In Vivo	Although ML216 inhibits unwinding by the sequence-related BLM and WRN helicases similarly in vitro, the apparent dependence on BLM for ML216 to exert its biological effects in human cells suggests BLM specificity for the drug's mechanism of action in vivo. A co-crystal structure of BLM in complex with inhibitor would be informative. Cellular cues in vivo may induce a specific conformation of WRN that makes it resistant to ML216[2].

In Vitro:

DMSO : 20 mg/mL (**52.18 mM;** Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6088 mL	13.0439 mL	26.0879 mL
5 mM	0.5218 mL	2.6088 mL	5.2176 mL
10 mM	0.2609 mL	1.3044 mL	2.6088 mL

*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

Solvent&Solubility	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→ 90% (20% SBE-β-CD in saline) Solubility: 2 mg/mL (5.22 mM); Suspended solution; Need ultrasonic 此方案可获得 2 mg/mL (5.22 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。 以 1 mL 工作液为例，取 100 μL 20.0 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。
References	[1]. Nguyen GH, et al. A small molecule inhibitor of the BLM helicase modulates chromosome stability in human cells. Chem Biol. 2013 Jan 24;20(1):55-62. [2]. Banerjee T, et al. A new development in DNA repair modulation: discovery of a BLM helicase inhibitor. Cell Cycle. 2013 Mar 1;12(5):713-4.