For Research Use Only

Lexibulin

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Catalog Number: CM05132

产品信息

Catalog Number:
CM05132

CAS号:
917111-44-5

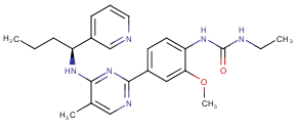
分子式:
$C_{24}H_{30}N_6O_2$

主要靶点:
Apoptosis|Reactive Oxygen Species|Microtubule Associated

主要通路:
NF-κB信号通路|凋亡|代谢|免疫与炎症|细胞骨架

分子量:
434.53

溶解度:
DMSO:80 mg/mL (184.1 mM),Ethanol:16 mg/mL (36.8 mM)



靶点活性

Microtubules (cancer cell lines):10 nM-100 nM

体外活性

CYT997（7.5 mg/kg,i.p.）给药肝转移,6 h时明显降低血流,效果与阳性对照CA4P（100 mg/kg）的作用程度相近.与体外抗骨髓瘤活性一致,CYT997（15 mg/kg/day）处理激进型系统性骨髓性白血病小鼠模型,可使小鼠寿命延长.与静脉注射半衰期(1.5小时)相比,CYT997口服处理大鼠的半衰期(2.5 小时)稍长, 绝对口服生物有效性为50%-70%.与紫杉醇相比,CYT997口服给药PC3移植瘤小鼠,对肿瘤生长的抑制作用更强,该作用呈剂量依赖性.CYT997对携带小鼠乳腺癌4T1细胞的同位模型也有效,该模型对Paclitaxel治疗是有一定抗性的.

体内活性

CYT997对16种癌细胞均有毒性（IC50：9/101 nM,HepG2和KHOS/NP细胞）。CYT997对HCT15细胞有较好作用（IC50：52 nM）,其具有多耐药机制Pgp(MDR+)。处理A549细胞24 h,CYT997（1 μM）对微管快速重组有诱导作用,包括现有的微管网络遭破坏,及菌斑处细胞质微管蛋白累积,还显著改变细胞形态,包括粘附细胞丢失,细胞减少。通过抑制微管聚合,CYT997可使细胞周期停在G2-M分界处,且促使磷酸化Bcl-2增多,还可使cyclin B1表达、caspase-3激活及PARP产生增高。CYT997处理1小时后,快速可逆的提高HUVEC单层膜通透性（IC50：80 nM）。与CYT997破坏细胞微管蛋白一致,其有效抑制增殖,诱导细胞周期停滞,且诱导人骨髓细胞系和原代MM细胞凋亡。

细胞实验

Cells are exposed to various concentrations of CYT997 for ~72 hours. Cell proliferation is assessed with either the Alamar blue or MTT assays. For MTT assays, 5 mg/mL of MTT is added to all wells, plates are incubated for 6 hours at 37 °C, and then lysis buffer is added (10% SDS in 0.01 N HCl) and absorbance is measured at 620 nm in a BMG Technologies Lumistar or Polarstar plate reader. For Alamar blue assays, Alamar blue (10 μL/well) is added to each well and the plates are incubated at 37 °C for 4 hours. The fluorescence is then measured using a fluorescence plate reader with an excitation filter at 544 nm and an emission filter at 590 nm. For cell cycle analysis, cells are fixed and permeabilized with 70% ethanol in PBS and incubated at 4 °C overnight. RNase-treated samples (10 μg RNase/mL for 20 minutes at 37 °C) are stained with propidium iodide (5 μg/mL) at 4 °C for a minimum of 10 minutes. Cell cycle variables are determined by fluorescence-activated cell sorting (FACS) analysis using a Beckman-Coulter Quanta SC MPL system and analyzed using CXP Software. For apoptosis analysis, cells are detached and collected. Annexin staining is done using the Vybrant Apoptosis Assay Kit. Cells are stored on ice and analyzed on a Beckman Coulter Quanta MPL within 1 hour of preparation. Annexin V–positive cells are determined using two-channel analysis.(Only for Reference)

描述

Lexibulin(CYT-997) is a potent tubulin polymerization inhibitor (IC50: 10-100 nM, in Y cell lines). Lexibulin blocks the formation of the mitotic spindle and leading to cell cycle arrest at the G2/M phase; this may result in disruption of the tumor vasculature and tumor blood flow, and tumor cell death.

储存

Powder: -20°C for 3 years | In solvent: -80°C for 1 year